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ADVANCED MANAGEMENT

Quarterly Journal

*The Society for the
Advancement of Management*

Work Planning in Industry

Staff Duplication

Women War Workers

Placement Procedure

Free Enterprise

Non-Financial and Financial Incentives

Production and Inventory Control

Salvage Programs

Work Planning in Government

July-September, 1942

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Comment

THE varied recent activities of the Washington Chapter of this Society on behalf of better management in the operation of our national wartime machine (of which Mr. Juran's article is a notable illustration) prompts to a consideration of the problem of how all kinds of large-scale enterprises can be vitalized to assure all-out production.

The problem familiarly associated with the word "bureaucracy" is not new, nor is it confined solely to government organizations. But in recent years it has been all too easy to dismiss any presumptive inefficiencies of governmental or other large-scale operation merely by alleging that "of course that is the way bureaucracy works." It has been popularly assumed that there is something inevitable in the nature of a creeping paralysis about the manner in which too many governmental agencies operate. "Bureaucracy" is assumed to connote reluctance of individuals to carry responsibility, confusion in authority, needless duplication of effort, considerations of personal preferment held primary in staffing and a general lackadaisical atmosphere in which work is pursued at a desultory pace.

To the extent that there is validity in this kind of observation, it becomes, of course, a national crime in times of war emergency. And to ask ourselves how bureaucracy thus understood is to be offset and how necessary organizations are to be supercharged with the dynamic of purposeful zeal and effective activity becomes a question of the first importance.

That there is no necessary inevitability about this kind of bureaucracy is to be concluded from the fact that here and there both in government agencies and in other large-scale enterprises we see examples of groups which mobilize genuinely and powerfully to get a specified job done.

From examination of such examples, it becomes clear that there are a number of elements which, if consciously understood and striven for can, to an appreciable degree, give the lie to the inevitability of bureaucratic paralysis. These elements may be listed as—a clear conception of purpose dominating the organization; good leadership directing the organization; good training characterizing induction into the organization and continuance therein; a clear notion of tasks, obligations and standards of work expected of individuals; adequate provision for regard of the necessary self-respect of all individuals; clearly understood and

reasonable rules and regulations; and finally, organized provision for shared responsibility for the job of facilitating production by genuine collaborative conferences centered on the creative interests of those involved.

Such elements are readily enumerated, but the major condition of fulfilling such a program is that there should be full grasp of these elements of the problem at the top of the organization, and a persistent will there to implicate all members of the staff in the attitudes and the processes which we today know are the conditions generating self-propulsive activities in people. Put in another way, bureaucracy is the outcome of lazy, inattentive and psychologically inept management. And until the conditions of good morale and purposeful group effort are more widely understood, it goes without saying that bureaucracy will persist.

It needs also to be remembered at the outset that the program just outlined for generating a creative attitude toward production depends upon a certain kind of conviction about the kind of organisms that human beings are. It depends upon a convinced realization that the operating pattern of 19th century management, which was a pattern of domination and of imposing the will and the orders of a "superior," was a denial of everything we know about how to evoke attention, loyalty and creative zeal from groups of people.

Management by domination gives the lie to human nature because it fails to recognize how deeply people are ready and waiting to be summoned to some enterprise which will take command of their scattered, bored and trivial preoccupations. To say that people crave to be led is, when one understands the higher responsibilities of leadership, synonymous with saying that most of us are eager to apply our energies and our best resources on behalf of some program we deem sufficiently worthwhile to command our loyalty. People yearn to be implicated in action that gives them a sense of self-importance.

It is relatively easy to suggest how the challenge of a commanding purpose can be invoked in a war emergency. Yet to dramatize that into terms appealing to government clerks habituated to the leisurely pace of peacetime Washington is not so easy. Indeed the carrying out of this program of vitalization suggests a degree of attentiveness, of energy, sensitiveness and desire to use the pooled intellectual resources of other

(Please turn to page 129)

Work Planning in Industry¹

By J. K. LOUDEN

Director of Industrial Engineering, The National Supply Company, Pittsburgh

WORK Planning, or Programming, is the name given that vital function in a successful organization which is concerned with laying the pattern or preparing the step-by-step program to achieve a predetermined objective with the minimum of waste, be it materials, time, or effort, and with the maximum effectiveness. Primarily it involves and is a result of the analysis, planning and organizing function of Management.

Work Planning is as essential to the managers and workers of a business as a blueprint is to the architect and builders of a house. It is essential that peacetime industries operate to a plan or program, if they are going to achieve the measure of success they should. It is vital for a plant or industry involved in conversion for war, increasing production for war, or building to manufacture an entirely new product for war, to have a definite, well-thought-out plan of work. Not to have it assures a waste of materials, time and effort. To have it minimizes these possibilities to a large degree.

When properly developed, this Work Plan serves not only as a guide along the path of achievement, but also as a check on the progress being made towards reaching the goal, not only from a directional standpoint but also from a time standpoint. Its development, prosecution and control must be of such a nature as to insure the proper degree of flexibility. By that I mean that as the program unfolds and results and data become actualities, we may find a different situation from that which was apparent at first study. Then the co-ordinator of the plan must be able to evaluate these new findings, determine what should be done and reshape the program accordingly.

This Work Plan not only states what the objective of the business or industry is and what steps must be taken to attain that objective, but the sequence of those steps, their relationship and who shall be responsible for their development.

The idea of having a Work Plan is so apparent that it is inconceivable that anyone would attempt to run a business without such a plan; yet it is a fact that the

absence of such a plan is all too common in industry.

If I were a banker and the manager of a business came to me for a loan, my first request in giving it consideration would not be the traditional one, "Let me see your balance sheet—your profit and loss statement," but it would be, "Let me see your work plan, your program for your business, the road map you have developed for your business." If he could not show me that he had thought his problem through, knew what had to be done and how to do it, I am afraid he would not stand much chance of getting his money requirements, regardless of the condition of his balance sheet. On the other hand, I would be inclined to take a chance on the man whose balance sheet—although it might not be the best—knew what had to be done and how to do it; because on the one hand you have an executive with an orderly, logical mind, and on the other, the hunch-playing, catch-as-catch-can opportunist who lives from day to day.

What, then, should a comprehensive Work Plan include? It should include every phase and function of a business; what that phase or function's contribution to the over-all picture is to be, and how it is to be achieved.

Each level in an organization and each unit on each level has a definite job to do or function to perform; otherwise it has no excuse for being. Therefore, its contribution must be clearly stated and defined in sufficient detail to enable all participants to see and understand that unit's role, and at the same time provide a definite work guide for the personnel of that unit.

The importance of a Work Plan and its uses are not too well understood by many managers. I once heard the head of an organization state—upon his being approached on the subject of his need for a long- and short-range program for his plant—that his situation was too unsettled to prepare a program at this time; he was not making money; he suspected he had too many lines of product, some of which would have to be dropped because they were not profitable but he did not know which ones right now were not profitable. He also said that his organization structure was out of balance and his supervisory personnel was substandard. He complained that his defective work and scrap losses were entirely too high. He stated that the equipment

¹ Paper presented at a meeting of the Washington, D.C., Chapter of The Society for the Advancement of Management, April 14, 1942.

in the plant had been neglected and needed overhauling; he did not like the layout of his plant, nor the lighting; he surmised that his methods and tooling were old-fashioned and high cost, and so on. All of which, in his mind, added up to the fact that his business was too unsettled to program, but that as soon as he got squared around and knew where he was, he would be able to sit down then and plan his business. The man was serious, yet his whole story was just about the most convincing argument for a Work Plan I have ever heard; in fact, without it his cause and case would be hopeless.

In developing a Work Plan I do not mean merely to list the functions of the unit concerned; for example, under the credit department to state that it is to maintain a good collection record and keep bad debts to a minimum. That is not work planning. If collections have been poor, why have they? Set up a program to find out why, and upon analysis of that "why" set up how you are going to overcome this poor collection situation, and change it to a good one; how fast you believe it should be done and can be done; who must do it, and what shall be done to maintain the good record after it has been achieved. *That is work planning.*

Each level of management and each unit at each level should have its share of the plan designated and described. That share should be commensurate with the duties and responsibilities of the people in that unit at that level. They must not be expected to do more than their responsibilities allow, nor should they be allowed to do less.

In developing a Work Plan, I like to have it take two major phases. The first involves the development of the general plan. This general plan requires a careful analysis of your current situation, your current problem, to determine fully where you are and what condition you are in. Then establish your objective: where you want to go. Then list everything you can think of involving every phase of your business that must be done if you are going to reach that objective. Next, break down each item sufficiently to clarify its intent and scope. Then decide who or what unit should be responsible for developing each item.

After you have listed everything that you know must be done, the next step is to analyze the entire program to establish the sequence with which each item listed will be done. Some will depend on others completely or at least to a sufficient degree that they must await the completion of some other item. There will be those of more pressing importance; those which affect the overall picture and should logically be done first—operating

on the principle of "first things first." The temptation to do some of the more obvious things—even, perhaps, some of the more spectacular—out of their logical order, must be guarded against. Of course, the exact sequence will depend largely on a given situation.

After the assignment of each item in the program has been made, the department head receiving a particular assignment should then break it down into a detailed program which will demonstrate how he is going to approach it, what he is going to seek, how he is going to analyze it, how he is going to develop his answer and approximately how long it should take him.

For illustration, I have chosen actual examples from a Work Plan designed for a given organization: *The Development and Promotion of a "Product Principle,"* (such as, a standardized product, universal in application, low cost-to-performance ratio, mass produced.)

1. To govern Engineering and Manufacture.
2. To govern Sales and Advertising.

This particular project was assigned to the executive management of the company, aided by the works manager and the sales manager. These were considered to be the proper units and level of organization to develop such a fundamental principle.

You can easily see what detailed studies spring from such an item: a thorough market analysis and study of competition and products in each field; a study of the profit potentials on each product in each field; a study of the working capital required, new equipment, additional personnel and the like.

In conversion for war, such a study, or product principle determination, if you like, would involve a thorough analysis of your existing facilities, a study of products you could make if given a choice, and the selection of that product or products on which you could go into production with a minimum of change and difficulty. This would be accomplished by selecting the products most nearly like your regular product or requiring a similar process to produce; and on the basis of the quantity involved and the delivery time element, break down each product into its component parts, spread them to manufacturing processes; and then by means of known values and careful estimates, determine your machine requirements, man power requirements, material requirements, what subcontracting you would have to have done and who might do it.

That very generally sketches a method used in planning for conversion to war. When the results of these studies are pulled together, then the most logical and easiest change is apparent, and after one has been se-

lected, what must be done to get ready for it is known. The most important point is that if a company has been operating in a planned, logical manner and its people trained to think and act in that manner, the confusion, uncertainty and delay in converting, expanding, or increasing production for war is greatly minimized.

The second item from that same general work program was to *develop a proficient and economical organization structure.*

1. Analyze present organization structure.
 - a. As to lines of authority.
 - b. As to functions and responsibilities.
 - c. Prepare organization charts, including functions, responsibilities and lines of authority.
2. Determine functional needs of the organization for operation of the business.
 - a. Administrative.
 - b. Engineering.
 - c. Manufacturing.
 - d. Sales.
 - e. Financial.
3. Develop, following sound organization principles, a proficient organization structure based on:
 - a. Analysis and grouping of essential functions.
 - b. Grouping of functions into "jobs."
 - c. Due consideration to number of employees supervised.
 - d. Determine and establish standard responsibilities and lines of authority.
 - e. Establish functional relationships with general, or headquarters, divisions, or departments.
4. Prepare standard manuals of responsibilities and functions for each department.

Another item in that program was the *Analysis of Machine Tools and Equipment.*

1. Present Equipment:
 - a. Make survey to determine:
 1. Whether up to date and modern.
 2. State of repair.
 3. Usages.
 - b. Prepare recommendations, accompanied by engineering estimates, to:
 1. Repair worn machines and equipment.
 2. Modernize or rehabilitate obsolete equipment.
 3. Replace worn-out or obsolete equipment with new and modern machines.
 4. Purchase needed equipment not now in shop.
 - c. Prepare schedule for carrying forward approved recommendations.

2. Equipment needed for all new products.

- a. Based on forecasted production requirements and methods and tooling studies, determine:
 1. What additional standard machines and equipment will be needed over and above present supply, making field studies when necessary.
 2. What special-purpose equipment will be needed and the quantity, making field studies wherever necessary.
- b. Prepare recommendations, accompanied by engineering estimates, as to what equipment and the quantity to purchase.
- c. Prepare schedule as to when new equipment will be required.

(An identical type of study would be used in converting a plant for war production, expanding a plant, or preparing to manufacture a new product.)

These last two items were assigned the industrial engineering department as its primary responsibility.

Then each department head took the item assigned him and broke it down into a detailed program. In so doing, he estimated the time required to accomplish his task.

For example, taking the organization study from a general program, the head of the industrial engineering department prepared a detailed program as follows:

The analysis will include the functions of all departments in that division:

1. All manufacturing departments and the foundry.
2. Production and Inventory Control Department.
3. Inspection Department.
4. Industrial Relations Department.
5. Engineering Department.
6. Purchasing Department.
7. Sales Department.
8. Accounting, Payroll and Billing.
9. Administrative and General.
10. Financial.
11. Industrial Engineering Department.
12. Plant Engineering or Maintenance Department.

Each project in the following program will be undertaken for each department listed above.

- I. Meetings with management, department heads, and supervision to explain the purpose of the project and solicit their co-operation.
- II. Prepare a check list of anticipated functions for use and guidance in discussion with department heads, supervisors and foremen.
 - A. Of major functional divisions.
 - B. Of line functions essential to major functions.

- C. Of headquarters functions essential to the division.
- III. Determine existing job and functional organization.
- A. Determine functional organization.
1. Determine scope of major functions (with department head).
 2. Determine organization of functions within departments (with line supervision).
 3. Determine details of functions (with section leaders).
 4. Determine sources of information essential to functions.
 5. Develop charts showing present functional organization and interrelationships.
 - a. For each department.
 - b. For all departments.
- B. Determine existing job organization and lines of authority.
1. General supervision and number of men supervised.
 2. Departmental supervision and number of men supervised.
 3. Determine lines of authority, checking with both the instructor and the instructed.
 4. Develop charts showing present job organization, lines of authority and interrelationships.
- IV. Analyze present functional and job organization.
- A. Organization of functions.
1. Conflicting functions.
 2. Split functions.
 3. Missing or inadequate functions.
 4. Duplication of functions.
 5. Misplaced control over functions.
 6. Unnecessary functions.
 7. Organization of functions into jobs.
- B. Organization of jobs and personnel.
1. Conflicting authority.
 2. Adequacy in quality and quantity of supervision.
 3. Duplicate lines of authority and responsibility.
- V. Develop the proposed organization structure for functions and jobs, applying the following principles of good organization:
1. Responsibility of each job to a *single* supervisor.
 2. Confine upper brackets to direct supervision over six men, or fewer.

3. Confine line supervision to 20 men or fewer.
 4. Functions grouped according to sameness of purpose, process, material and workplace.
 5. Prime functions, with single authority and responsibility, to avoid buck-passing.
 6. A specific uniting purpose to be established for each supervised group.
- A. Organize essential major functions into departments.
1. Consideration to size of business and number of departments warranted.
 2. Consideration to long-range organization requirements.
 3. Consideration to logical departmental organization in relation to general organization.
- B. Organize departmental functions into jobs.
1. Logically group functions into workable jobs.
 2. Determine levels of supervision required.
- C. Develop functional relationship between all departments.
- D. Prepare organization charts of the proposed structure.
1. Showing organization of functions.
 2. Showing organization of jobs and lines of authority.

I believe the development of and the general co-ordination of such work plans is a staff function, properly falling under a division which could be known as the Administration and Planning Division or the Industrial Engineering Division.

The details of the Work Program must be approved by the general and divisional operating heads. In reality, it is their program and they must assume full responsibility for it and be actively responsible for the co-ordination of it, although the staff function actually handles the details of the co-ordination.

It is vital that positive and periodic follow-up be made of the progress of the work outlined in the Work Plan and this can be done through the medium of progress reports on a semi-monthly or, at least, a monthly basis. Each department head, using the outline of the Work Plan as a guide, reports what has been accomplished over the past period, what difficulties or delays have been met, what is being done to overcome them and what they plan to accomplish during the next period. Copies of these progress reports are sent to the operating head of the division, the general operating heads in the central office and the chief of the co-ordinating unit. This provides them with the necessary in-

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Staff Duplication and Incentives to Staff Economy¹

By J. M. JURAN

Assistant Administrator, Lend-Lease Administration, Washington, D. C.

THE necessary extensions of federal activities in the enlargement of present agencies and in the creation of new agencies present many urgent problems to management experts. Although not new in kind, they are new in scale; and added complications grow out of the fact that they are public agencies. Among these problems that of duplication of functions and duties arises to plague us, especially when speed makes preliminary check-up all but impossible.

Duplication distinguished from overlap of jurisdiction

In theory it requires only one man, with a knowledge of the facts and with jurisdiction over the subject matter, to render a decision in any given situation.

Where one-man jurisdiction does not hold, or is impractical to attain, it becomes necessary that two or more men know the same set of facts. For example, in the export of goods to foreign shores, there are presently many government agencies involved, some of them being as follows:

The Procurement Division of the Treasury Department

The Bureau of Customs of the Treasury Department

Several Bureaus of the Navy Department

Several Divisions of the War Department

The Division of Traffic Movement of the Office of Defense Transportation

The Division of Foreign Trade Statistics of the Department of Commerce

The Export Control Division of the Board of Economic Warfare

The Division of Exports and Defense Aid of the State Department

The Division of Statistical Standards of the Bureau of the Budget

The Reports and Records Division of the Office of Lend-Lease Administration

To reach a decision which is satisfactory to all of these functions requires that many men know the same set of facts and the multiple attainment of this knowledge is in a sense a duplication. However, it is not the

kind of duplication we are talking about. A rearrangement of functions to avoid the overlap just recited would yield a new set of overlaps because of the resultant setting up of new co-ordinating bodies.

Duplications are usually partial rather than complete

We are all familiar with the situation in which manufacturing companies complain that they are required, on much the same subject matter, to fill out several questionnaires received from different government agencies. For example, government bureau #1 is charged with the duty of establishing prices for commodity A, and finds that in the exercise of this duty it is necessary to send out a questionnaire asking for data on inventories of commodity A, plus supplemental data relating to costs and prices. Government bureau #2 is charged with finding a substitute for this same commodity A, and finds that in the exercise of this duty it is necessary to send out a questionnaire asking for data on inventories of commodity A, plus supplemental data relating to manufacturing processes and usage. Aside from the manufacturers' problems of making two successive inventories, the two government bureaus will each be making up statistical summaries of the inventory of commodity A. Furthermore, these summaries will conflict and will present a problem in reconciliation.

Notwithstanding all this, it may well be that the inventory data is only a minority of each questionnaire, and that the effort required to get these two bureaus together on making up a joint questionnaire and on issuing this at a time convenient to both and on obtaining one set of data suitable for both, is greater than the duplication which would be saved.

Duplication of effort must be greater than the effort to eliminate it

The existence of duplication does not of itself make out a case for eliminating it. As already touched on, duplication is usually only partial, and the added work required to strip out the duplicated portion from its normal setting may make matters worse rather than better. In addition, the investigation effort and the effort required to put across the recommendations for

¹ Paper presented at a meeting of the Washington, D.C., Chapter of The Society for the Advancement of Management, June 11, 1942.

eliminating the duplication have to be put into the scale pan.

From all this we must note that the duplication we are talking about narrows down to that duplication which is avoidable, and which can be avoided at less effort than is consumed by the duplication itself.

Duplication is a disease of big organization, rather than of government alone

It is in point to note that duplication is associated primarily with bigness of organization, rather than with government operation. I can state this from personal observation in a number of large corporations. In small organizations, duplication is obvious to the men at the head of the organization because, though at the head, they are nevertheless close to the work level. Furthermore, in the case of a jurisdictional dispute, the presence of a one-man boss close to the work level makes appeal fairly simple. In large organizations, however, duplication can hide in the nooks and crannies, and even if known, a proper case for elimination is rendered much more difficult because the man with final authority over all concerned may be so many layers removed from the work level as to make appeal difficult.

The question of motive in competitive business as compared to motive in government is too broad to exhaust here, though we must note that it bears on this problem. It is my own feeling that training in management-mindedness and techniques can go far to bring about sound management, quite irrespective of motive. But in the absence of training in management-mindedness and techniques, I have much doubt, from what I have seen to date, that there is in government today anything like as strong an impelling force to do a job with minimum man-hours as there is today in competitive business because so often a business organization may be forced to do a good management job as the only means of meeting competition. Of this, more later.

Problem within agency distinguished from problem between agencies

The intra-agency problem differs from the inter-agency problem only in degree. Extent of duplication is primarily a function of size of organization, and it is to be expected that between the bureaus within one big agency we will find quite the same kind and extent of duplications as exists between independent agencies. There is one important difference in the case of duplication between agencies operating under separate executive

orders, because the ultimate appeal in jurisdictional disputes may be to the chief executive himself, and from the very nature of things, only extremely broad problems will actually go to such appeal, leaving many cases hanging in the air even though collectively they are of great consequence. Other than this, which is admittedly of great importance, the technique of finding duplications and of eliminating them is essentially alike, whether inter-agency or intra-agency.

Preventing duplication from arising in the first place

It is well to consider next the various origins of duplications. In a generic and theoretical way, sound management is a preventive nostrum for all of them. However, as a practical matter, the preventive techniques will differ with the conditions which can cause duplication. We can list a few of such conditions which cover the majority of cases.

1. Ignorance

Some duplications arise because organization A was not at all aware that organization B was already doing the same thing. The prevention lies in more effective liaison and in making a reasonable search and inquiry before undertaking a new activity. Here again, the effort required to make the search is a factor to be reckoned with.

2. Inadequacy of Existing Data or Functions

This is a particularly important class of cases. Organization A may need certain data which are partly but not completely available in organization B. Organization A is then faced with the choice of (1) making a deal with organization B whereby one of them will do the job for both, or (2) undertaking by itself to supply the missing data. Such an undertaking will necessarily require duplicating some of the effort already being expended. A proper decision in such cases can be reached only if both organizations approach the problem on the basis of what is the way to provide the necessary data at a minimum of cost.

3. Mistrust

Duplication can arise because organization A is unwilling to rely on organization B for the data or the doing of the function. The preventive here is for a frank discussion between the organization heads involved; clearing up the misgivings and investigating the causes of the mistrust.

Mistrust is a particularly vicious cause of duplication, because mistrust breeds further and more intensive mistrust and there may develop an enmity which penetrates

far into each organization and which may require years to dissolve.

4. Failure to Stop a Going Job

The starting of something in organization A may duplicate what is already on a going basis in organization B. In those cases where, all things considered, organization B ought to quit doing the function, there arises an understandable human problem, because the employees are confronted with making a change of some sort. It may be as drastic as a layoff or a demotion, or it may mean a change of agencies, or only a change of duties. The resistance to change is so pronounced that it can be said fairly that the cutting out of useless functions is generally more difficult than is the building up of new functions. The keeping of the old function is like the performance of the little dog's tail in that delightful ditty:

There was a dachshund, one so long
He hadn't any notion
How long it took to notify
His tail of his emotion.
And so it happened, though his eyes
Were filled with tears and sadness,
His little tail went wagging on
Because of previous gladness.

5. Human Weakness

I add the item of human weakness to the list of origins of duplications simply as a lazy way of explaining some of the remaining cases. The supervisor who has been criticized for errors may set up an unduly expensive set of checks and balances—a thousand dollars spent to avoid ten dollars worth of hell. Another supervisor may, by collecting just a few more people under him, become eligible to cross the Civil Service equator into the next grade. With a bigger force he can meet peak loads more easily—he can get emergency jobs out more quickly—he can increase flexibility generally. There are so many situations in which the presence of surplus people can help that he is sorely tempted to get them if there is nothing but his conscience to stop him.

The long-range problem of prevention

The *prevention* of these and other cases of duplication is a mighty problem in management. It is a long-range problem. But it requires a development of management-mindedness in government operation and this is a slow process in so vast an organization.

Despite the tremendous importance of this long-

range program, I am going to devote very little time to it for two reasons—first, because I think that there is before us an even more important short-range problem, and second, because the first steps for launching the long-range program seem to have been taken already. In this connection I direct you to several excellent papers by Mr. Donald C. Stone, Assistant Director of the Budget and Chief of the Division of Administrative Management. I direct you particularly to his paper "Emerging Challenges in Public Administration, The Country's Largest Management Problem." In addition I call your attention to an excellent paper by Mr. Bernard L. Gladieux of the Bureau of the Budget on the subject "Administrative Planning in the Federal Government." His paper points out the need for improved management in government operation and suggests the setting up of a management group (he calls it an administrative planning and research unit) in each sizeable organization of the government, these units to be responsible to the head of the organization and to be coordinated through a central administrative planning and research division such as now exists in the Bureau of the Budget.

All this seems sound to me and our Society should in my opinion devote itself to helping such a program to go forward at an accelerated pace. Yet on so large a scale, it is hard to talk of pace—rather it is a crawl or a creep. Something prompt and drastic must be done—now. There is required, now, a short-range program of cure to dash in ahead of the long-range problem of prevention. There are many nuggets of precious man-hours lying around the countryside which need not wait for more scientific gold recovery equipment.

Cure—A Short-Range Program

During today's work in Washington and in the field, thousands of people have spent part of their time doing what other people were doing in duplicate, in triplicate and so on beyond quintuplicate. Tomorrow the same thing will happen, and the next day. And so we will continue to fritter away millions of man-hours desperately needed for conduct of the war. This must stop—now.

We have an urgent problem of

1. Identifying the suspected cases of duplication. Many are already known. Some are notorious.
2. Studying and understanding the facts of these cases.
3. Preparing a recommendation for action for each case.

4. Presenting the facts and the recommendations to the responsible officials involved.

I would like to elaborate on these four points:

Identifying the suspected cases of duplication

I think this is the easiest part of the process because there are already so many well-known cases that fairly shriek at the people involved. Whenever I have attended in Washington a meeting of management-minded people, or even just people, and the subject of duplication is discussed, there arises a competition as to who can relate the worst existing case of duplication.

Studying and understanding the facts

This is the peculiar job of the management engineer. It requires the ability to look at a mass of details, however complex, and yet single out the real objective. The process involves first of all a full study and knowledge of the facts, then the determination of what can be eliminated with less effort than the effort being duplicated and finally a presentation of these facts.

Recommendation for action

The presentation of the facts is of great importance, because many of the situations are quite complicated by the related functions of the many organizations involved. The trick, and it is almost an art, is to extract from this complicated situation only those facts bearing directly on the problem and then to make graphic and other palatable presentation of these essential facts. Palatable is no overstatement when one considers that the final decisions must generally be by top officials who have neither the time nor the inclination to go into the full details of the investigation.

Presenting the recommendations to the responsible officials for action

All of you have heard about or have been involved in situations where the facts clearly point to some desirable action, and yet the responsible official will not act. Other cases involve two organization chiefs being at loggerheads with each other so that what is known to all is not being applied.

Such reluctance to act is a terrible thing at any time, and particularly at a time like this. The failure to act on the cases brought up discourages work on other cases and gives encouragement to building up of still more duplication. I think the answer to this requires adoption of a new concept in government thinking and it is

on this point that I hope I will see the bulk of the panel discussion.

Incentive to operate with minimum man-hours

The blunt fact is that there is no incentive for a supervisor in the government to operate with as few people as possible. On the contrary, the incentive is to operate with as many people as possible.

Within the last several weeks I made a set of decisions which reduced the number of jobs in one unit of my organization from 21 to 7. Where there were 21 people, the job of Chief of Unit was graded 6 and carried a rate of \$2300. The job of Chief of the Residue was graded 4 and carried a rate of \$1800. If the supervisor on the job had eliminated the extra 14 jobs on her own initiative (and the jobs were duplications of other work) what assurance did she have that for this good work she would get a benefit rather than a cut in pay.

Within the last few months I have shrunk a government division down to less than 70 per cent of its former size and the biggest obstacle was the resistance on the part of the lower level supervisors because they felt they were not protected somehow if they cut down their force. This is literally a terrible state of affairs.

Some of you may ask—"Why didn't you give them assurance that they would be taken care of?" The Civil Service classifiers may argue that population alone does not determine the grade of the job. However, it has required only a few months in Washington to show me that there is deeply imbedded in the government supervisory employe the belief that the number of people and functions under him are, to his well-being, of the highest order of importance. In my experience, any assurances by his supervisor do not appear to shake his belief. Whether the government employe *ought* to have this belief is quite beside the point. The fact is that he *does* have this belief. Furthermore, any plan for corrective action which does not adequately make provision for this fact is an unrealistic plan and is going to face great difficulties—in fact, it just won't work.

With man power as short as it is, there must be provided an urge to conserve it, and properly so. The military officers who save man power in the field are decorated for it, and properly so. The engineers who save materials, the scientists who develop new processes, the doctors who save the lives of man—all are given wide acclaim. But who ever heard of wide acclaim for the administrator or bureau head or supervisor who ran his job with a minimum of people?

There is a need—a desperate need—for holding the efficient supervisors up to acclaim—for promoting them—for raising their pay—for doing something to make elimination of duplication an honorable deed. If this is done, not only may the resistance be broken, but there may actually develop an eagerness among administrators and bureau heads and supervisors to compete with each other to see who can free the most man power. And it seems that no matter how much man power is freed, there still won't be enough to go around. None of the commodities we are rationing are any more scarce than man power.

I direct your attention to a memorandum issued recently by the Navy Department:

NAVY DEPARTMENT
WASHINGTON

June 1, 1942

*Memorandum for All Civil Personnel
Navy Department*

I realize that all personnel have as their first interest the winning of this war. To this end, they have been and will continue to make unsung sacrifices in time, money and physical strength. It is not our intention to let this go unrecognized.

As partial recognition, civilian supervisors who, through revision of their organizations, methods and procedures, *eliminate or reduce* paper work, forms, reports, functions, personnel, etc., unessential to the war effort:

1. Shall be given maximum credit on their Efficiency Ratings upon which automatic promotions are based.
2. Will be considered for an additional one step promotion within the eighteen or thirty-month period for especially meritorious results.
3. Shall receive first consideration for promotion to positions in higher grades.
4. Will receive cash awards for suggestions made in accordance with the Beneficial Suggestion Law.

There is a widespread and false impression that the grade of a position is determined solely by the number of persons supervised and the volume of work performed. I state emphatically that supervisors will not lose grade or income through their efforts to carry out this program.

All of us are working together on this tremendous job which confronts us and I am confident of your unfaltering and enthusiastic support. The elimination or reduction of paper work, forms, reports, functions, personnel, etc., which speed up the essential actions, is as important to success as guns and ships.

(Signed) FRANK KNOX

It seems to me that such assurance from the very top of the department is a realistic recognition of the heart of the problem. It is a way of removing the main ob-

stacle from the road. But even with this active resistance out of the way it still remains to develop a program for applying the principles of good management. Good management will not step in merely because the resistance to it is out—it requires a driving force to apply good management.

Appointment of Management Consultants

The dynamic carrying out of such a short-range project would, in addition, require that there be appointed for each sizeable department, agency, bureau or division, one or more capable and management-minded consultants to devote full time to elimination of duplication within that organization and between that organization and others. These consultants should be picked for their ability to think independently, for their willingness to hit hard and for their undying hatred of duplication and red tape. One way to exercise technical supervision of these consultants and to co-ordinate problems involving more than one agency is to set up in the government a temporary Management Consulting Board. The consultants for any one agency would be selected jointly by that agency and by the Management Consulting Board. Copies of recommendations made by the various consultants could go to the administrative head of the agency and also to the Management Consulting Board. And if it were proper under wartime censorship, I would suggest that copies of the recommendations be made public as well. Whether these consultants report to a new Temporary Board or to some existing government organization is relatively unimportant. The important thing is that such consultants be in fact appointed, that they be the right men for the job and that they have some central means of tying their efforts together.

The work of these consultants, of course, need not be restricted to duplication problems, nor should it. However, they should avoid the extremes of bickering over highly debatable cases, over pencils and paper clips, over furniture arrangements, over number of copies of paper and over other such problems which while important, are today chicken feed beside the problem of releasing man power.

I must return once more to the problem of the government supervisory employee who is convinced, rightly or wrongly, that he must get and retain as many people in his organization as he can accumulate. Collectively these government supervisory employees can delay and harass the consultants in their work. A statement from the chief of the agency to all supervisors assuring them

that there will be no loss in status arising from the effect of such a program will be of some help. So will a declared moratorium on Civil Service demotions following shrinkage in force. But most of all, some system of reward, of incentive, of recognition for supervisors who can operate their organization with less people, will develop a cumulative forcefulness as the rewarded cases become known. Just what form the reward takes—defense bonds, Congressional medals, promotion, etc., is unimportant when compared to the effect that the existence of such reward will have on the resistance of these supervisory employees to proposed reductions in force.

I would urge that this Society take up the cudgels for this or for some better means of acting now. Why not organize a set of meetings aimed to give the Management functions in government a shot-in-the-arm. There are enough people doing a good management job in Washington that a perfectly marvelous set of case histories can be collected together and presented in palatable form to the very top officials in government, with facts on the number of people which the application of sound management principles has in such cases released for other work.

A set of public meetings devoted to showing how it was done in actual cases can greatly stimulate those who want to act and are looking for examples of how. If such a program results in cleaning up only the obviously bad situations it will still be the biggest contribution this Society or any other management society has ever made.

There is considerable evidence that the man power recoverable through elimination of only the obvious cases of duplication would go far to relieve today's shortage of man power and this without adding a single new person to the rolls.

Conclusions

In closing I would like to present two conclusions, one as to the long-range problem and the other as to the short-range problem.

As to the long-range problem, it must be obvious that if this duplication and mismanagement continues, the resulting unwieldy structure is bound to collapse of its own weight. It would be a bitter result for those who have so earnestly advocated reforms through expansion of the functions of the federal government if their efforts collapsed not through any lack of merit of the original objectives, but rather through failure to use sound management methods in carrying out those objectives.

As to the short-range problem, the need for conserving man power, the need for minimizing Washington congestion, and the other needs which can be served by doing the same job with less people are all directly related to the length of time required to win the war. Man power is the most important ingredient in the war effort. The waste of it may be 25 per cent, or 50 per cent, or 10 per cent. We don't know how much, but we know it is plenty. We know that it is enough to present a challenge to the best brains and to the best efforts which management can bring to bear on the problem. More than these, it is a challenge to act now. Here is an opportunity, for all of us here, to ask ourselves—"What are we waiting for?" Each of us can, in his own sphere, either act, or use his influence on those who can act. Collectively we can start a movement which, once started, will develop its own momentum. Let us either get out of the way of those who can supply leadership to such a movement, or if we are really leaders in good management, let us rise to the occasion and supply that leadership.

TAYLOR BIOGRAPHY

A few copies of the biography of *Frederick W. Taylor* by Frank Barkley Copley are still available. This publication is now out of print. Orders should be placed promptly for the remaining copies.

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Management Planning for Using Women War Workers

By HELEN BAKER

Assistant Director, Industrial Relations Section, Princeton University

A GLANCE at the estimates of the employment of women in war industries will suggest the scope of the problems connected with this development. The increase during the latter half of 1942 is expected to be twice as great as the increase during the first half. An estimated additional two million required to meet production schedules for 1943 makes a probable peak of 5,500,000 women in war industry for the war period. While this forecast of production requirements in terms of woman power means different problems to the individual firm in different industries and different communities, it is the rare company that will not have to consider the possibility of the substitution of women for men on many jobs.

As in every major personnel development, a rapidly expanding labor force with fundamental changes in the character of the employed group requires for satisfactory management control: (1) information to provide a basis for top management judgment; (2) restudy of policies, and changes made according to available facts and consensus of supervisory and executive opinion; and (3) a revamping of personnel and production procedures.

In some plants, women's employment seems to have grown without definite plan or method. However, as it has become plain that plant employment requirements would involve much more than substituting a few women on men's jobs not very different from what the women had been doing, more and more companies have begun to develop definite procedures both in the planning for and in the actual employment of women.

Determining the Extent of the Use of Women in the Individual Plant

The Women's Bureau of the United States Department of Labor and the Occupational Analysis Section of the United States Employment Service have compiled lists of occupations on which women are now employed, occupations which are apparently suitable for women and occupations which are partially suitable.

The criteria of suitability stated or implied in connection with these lists are that within certain physical limitations women can perform satisfactorily almost any job that men perform, but that women are rarely employed for skilled and technical work which requires a long training period. While these lists are helpful, especially to companies which have had little experience with women in factory work, they do not substitute for a study of the jobs within a specific department or plant. Such a study is an essential step not only in determining the placement of women but also in preparing supervisors and workmen to accept the introduction of women. The experience of many companies suggests that a survey of this sort requires the active participation of the foremen. The time they must give to this can be kept to a minimum, however, if the procedure is well planned in advance.

In small plants, especially where many of the production jobs are light, the planning may be informal and the transition to a much greater employment of women may require few drastic changes in the job or plant. Where replacement is already in progress, the foremen have met with the production and personnel managers, discussed the departmental employment needs and the probable loss of additional men to the armed forces, and considered the specific jobs on which women could be placed at once or after slight changes. If the employees are organized, the union officers also have been consulted concerning changes in policies and wage rates. Responsibility for improved and increased number of rest rooms, first-aid rooms and cafeterias has usually rested with the personnel director. Policies as to type and age of women to be employed, wage rates, adjustments in hours schedules and other questions have been determined by the plant production and personnel managers after consultation with the foremen.

Procedures in Large Companies

In larger companies and in plants where many jobs have had to be re-engineered before women replaced

men, more formal procedures have been developed in planning for extensive substitution. One company, for example, has developed three basic forms to describe jobs now held principally by men. "A" is used for "male occupations or operations which can be assigned in full to female employees due to future requirements of armed forces"; "B" for "male occupations which, due to the nature of the work, working conditions, or the extended training period required, cannot be assigned to female employees"; and "C" for "male occupations or operations which can be assigned, in part, to female employees." Each of these forms includes space for the occupational code number, description of the operation or occupation, and present number of employees performing it. On form "B" (for jobs not suitable for women), an explanation must be given of why men are required. On forms "A" and "C" additional space is provided for information as to the length of the entire training period (including related experience), description of any necessary changes in operation, estimated length of the training period, estimated number of women, estimated number of men required in addition to women, and remarks.

To help the supervisors develop sound reasoning as to what is or is not suitable work for women, an instruction sheet accompanying forms "A," "B" and "C" suggests:

Study for the purpose of determining whether adjustments can or should be made in order to:

1. Lighten the work so as to require less strength.
2. Reduce the amount of background knowledge and skill required.
3. Remove disagreeable features which may cause women to dislike the work.

Another accompanying sheet lists the jobs women are now doing or have done in the company and suggests changes that can be made in jobs to make work lighter, less disagreeable and less skillful.

The management of the company expects a summary of these reports to provide a basis for planning as to what jobs women are to take over, the time scheduling of new employment and the amount and length of training required.

The general procedure in determining the possible extent of the substitution of women for men in office and technical work is similar to the procedure described above for production jobs. The important point is to analyze the situation and prospective replacement, department by department, to get an accurate picture of

total plant requirements. One company which has recently made a survey of possible replacement in factory office jobs includes in the departmental reports data on all items which need to be considered by management for the whole plant. Thus a departmental report gives detailed information not only on job descriptions, number of jobs which could be taken over by women, suggested time schedules for hiring, training and upgrading and wage rates, but also considers the effect of state hours laws on the need for overtime in the department, clothing, occupational diseases, rest room facilities, first-aid and related problems of housing and transportation involved in the replacement of men by women. With this accumulated information, a company can foresee the problems ahead and, by advance planning, avoid many difficulties.

Adjustments in Policies Affecting Employment and Training

Some of the questions of policy involved in the increased employment of women are: The age, education, marital status and home responsibilities of women to be employed; the use of pre-employment training facilities; wage rates; extent of upgrading; hours of work and shift assignments; improved health services and the extent of company co-operation in community problems affected by the greater employment of women in industry.

Some of these are new problems to a firm, others require reconsideration of previously established policies. For instance, a policy which had become widespread in depression years was not to employ married women and to require the resignation of female employees who married. This policy was one of the first to be changed as male labor became scarce and women's services more essential to industry. Instead of having any restriction against the employment of married women, a more practical policy now is to find out what a married woman's home responsibilities are and not to hire her unless the requirements and hours of the job can be satisfactorily fitted into the responsibilities the woman already has. While it is a temptation to employ anyone who seems able to do the job, many employment managers have found that to hire mothers of young children without making sure that the mother has some way of having them properly cared for is to invite high turnover and absenteeism.

The age limits set up frequently for the employment of women are not breaking down as rapidly as are the

restrictions against married women. However, there have been many changes in this respect during the past year and there are indications that industry is beginning to hire women according to their physical fitness and ability to learn the job rather than arbitrarily turning away any woman above 30, 35 or 40 years of age. Some companies have found that middle-aged women with comparatively few family responsibilities are more stable workers than younger women.

When a company is facing a tremendously expanded training problem, it has to decide whether all the training shall be done in the company or to what extent outside educational facilities are to be used for pre-employment and supplementary training for upgrading. A decision in this matter depends on the number and types of jobs for which training is needed, the previous arrangements for in-company training and the quality of the available outside training.

Plans for any extensive training program for women industrial recruits requires a decision as to how far and to what types of jobs women may be promoted. Early in the emergency, upgrading for all male employees qualified for more skilled or more responsible jobs was accepted as fundamental to the best use of the available labor supply. Similar policies applicable to women employees have been slow in developing. A common policy among concerns employing women before the national emergency was to hire women for a few specific occupations in the lower job classifications with no opportunity for promotion. Under the pressure of current employment needs, however, companies are beginning to upgrade women into all light semi-skilled jobs and are studying the possibilities of breaking down the more skilled jobs so that women may perform some of the operations previously done by highly skilled workmen.

The upgrading of women production workers involves questions both as to the desirability of women supervisors and as to equality of pay. There are good arguments both for and against women as supervisors. However, necessity is an important factor in changing opinions on any subject and it is evident that as the number of supervisors required increases and the men available and able for such jobs become scarcer, executives who have preferred to have only foremen and assistant foremen are beginning to consider the wisdom of employing women with qualifications for leadership. In some companies, college women are now being hired with the intention of promoting them to instructor and

supervisory positions just as soon as they have had sufficient experience in production work.

Wage Policy

The impact of the replacement of men by women on wage problems is less severe in companies which have always paid "the rate for the job" irrespective of sex than in those which have had long-established wage differentials for men and women. The latter companies have had to face questions of whether or not to maintain differentials in rates where so-called women's jobs are involved as well as what to pay when women are placed on men's work. The competition for women's services and union demands seem to have made it necessary by now for most companies to pay the man's rate for the job whenever a woman takes it over. If changes must be made in the operation before a woman can handle it, then the job is restudied and a new rate set.

Some of the companies which had different rates for men and women are, either through union pressure or because of management's desire to simplify the wage structure and attract more women applicants, establishing as quickly as possible uniform job classes and wage rates without reference to sex. Other companies are attempting to maintain the rate differentials on jobs previously filled by women. In order to avoid many quits and much dissatisfaction among the women of long service, these companies are giving their experienced women employees a chance to be promoted to the openings in men's jobs and are making the women's jobs the beginning work for new women employees. Two difficulties have been pointed out in connection with such an arrangement: (1) it may interfere with the development of an efficient job-rotation and upgrading-training structure in the emergency period; and (2) it is likely to complicate questions of seniority rights in the postwar period if and when women are again restricted to a comparatively limited group of occupations.

Hours of Work

Prior to this nation's entry into the war, a company's policies in regard to the hours of work for its women employees was often determined to a considerable extent by state law. Since December, many states have permitted suspension of hours laws upon individual application of a firm producing war material. While the state groups set up to pass upon applications for exemp-

tions have prevented a wholesale breakdown of standards, the individual company has had more responsibility in deciding for itself whether daily or weekly hours much longer than normal are satisfactory in terms of increased productivity and employee health and morale.

Surveys in the past war and more recently both in England and the United States have revealed that women's absence rates increase more rapidly with increased hours of work than men's. It is felt that this is due as much or more to home responsibilities than to illness. In any case, if women are to be kept voluntarily employed in war industries and show reasonably regular attendance, management in setting the hours of work for them must take into account all the factors affecting fatigue on a particular job and also the greater home responsibilities of women.

The matter of shift assignments for women is perhaps an even more difficult question than a decision as to the daily and weekly hours. Companies are complaining that it is hard to recruit women either for the second or third shift or both. Women with families often prefer the night shift, but then they do their housework during the day, get little sleep and in a short time have to give up their jobs on account of illness. Younger women dislike the second shift because it interferes with their social activities. Rotating shifts might be the answer, but rotation is particularly difficult for mothers of young children who must be cared for while the parents work. These are all problems which must be studied in preparing hours schedules for the employment of women on round-the-clock production.

Health and Safety

A survey indicating the possibility of a considerable increase in the number of women in the plant will bring up questions of the adequacy of women's rest rooms, requirements as to physical examinations for women, new first-aid rooms and the need for improved safety devices or special safety instruction for women on hazardous work. The greater susceptibility of women to certain substances and their nervous reaction to excessive noise requires study of possible improvements in working conditions and relocation of certain operations. Perhaps more attention needs to be given to rest periods, lunchrooms and canteens, especially considering the fact that many women eat very light breakfasts or none.

The matter of clothing requirements might seem to

be a minor one, and yet hasty decisions by a purchasing agent or production executive who failed to take into account appearance or laundry problems have resulted in some instances in much ill will against management. What one wears is important to a woman, and the companies which have taken time to explain the need for safe clothing and have discussed with a woman's committee the type of uniform to be required have avoided many grievances.

Has Industry Any Social Responsibility in the Employment of Mothers?

As suggested above, increased hours of work and assignments to a second or third shift bear particularly hard on mothers who have young children to look after and who must carry arduous household duties in addition to their industrial jobs. Perhaps in normal times a company is justified in saying "Take it or leave it," and in expecting the woman employee to stand up to the job she has taken of her own volition. Women themselves, especially when they are getting equal pay, hesitate to ask for special privileges. But these are not normal times and many women are entering industry—and more will have to—who are not usually employed outside the home. A statement of Ernest Bevin to British employers is becoming more and more applicable here:

"It will be urged in objection that management becomes disorganized when special arrangements of this character have to be made for individuals. To this, the answer is that the paramount consideration is to make it as easy as possible for women to enter the factories and, to that end, there is no alternative but to adapt factory practice to the present situation."

In every country at war, women are an important part of the production army. They are becoming increasingly essential to our war industries, and to get the needed number of women into industry without breaking down family life and the health of the mothers is likely to require the co-operative efforts of industry, government and community agencies. The initiative in attacking the social problems involved in the greater employment of women and the administration of the program undoubtedly rests with the community agencies. However, industry's co-operation is necessary to point out to the agencies the problem among its employees, to make reasonable adjustments in personnel policies and to direct to the proper agency individual employees who need help.

(Please turn to page 132)

Personalizing the Process of Placement

Part I

By CLARENCE FRASER

The Bell Telephone Company of Canada

THIS article and its sequel in the next Journal present a systematic procedure used in placing workers in work, in which a completed placement is considered to include both introducing the worker to the kind of work for which he is suited and ensuring his complete integration into the network of human relations of which the work situation is composed.

* * * * *

"He's just a good hard working boy."

"Could he ever be a foreman?"

"Well—I don't know, but let's look into it. . . ."

We have been looking into it for the past two years and this is the point we have reached. We are not sure yet, but we think we are in the early stages of an important development in administration and cultivation of man power. True, what we have found is not new in its elements, but, so far as we know, the combination is new. Three facts encourage us in this point of view—first, the sequence of steps fits easily into accepted theories of administrative functions, formal organization structure and social organization—second, the procedure has been developed through participation by literally hundreds of men, mostly operating officials and is still being developed—third, the procedure has worked with evident success where it has been carefully and fully applied, while our failures in placement are in every case traceable to the neglect or faulty application of some step or steps in the procedure.

Objectives

We start with three objectives:

1. To have the right man, in the right job, in the right place, at the right time—this is the normal desire of management.
2. To aid every man to develop to the limit of his capacities, interests and opportunities—this is the normal desire of the individual worker.
3. To ensure that every entrant into a working group adjust himself to the demands of the new work situation and be fully accepted by the group as a member

of the team—this is the normal desire of management in pursuit of production, and of the individual worker in pursuit of happiness derived from social acceptance.

Procedure

The procedure is simple. It unwinds itself as you move through it. The process consists of three phases, each one identified in terms of accepted theory of administrative functions:

- A. The Planning Phase
- B. The Organizing and Co-ordinating Phase
- C. The Controlling Phase

The Planning Phase

This consists of four steps, each step leading to a specific product; namely,

- I. A Work Career Recommendation
- II. A Work Opportunity
- III. A Placement Plan
- IV. An Acceptance of the Plan by the Worker

Each step in turn follows a natural sequence of three operations, the first two of analytical nature, the last synthetical, leading to a decision, or a specific point in the process of planning. (See Figures 1 and 2.)

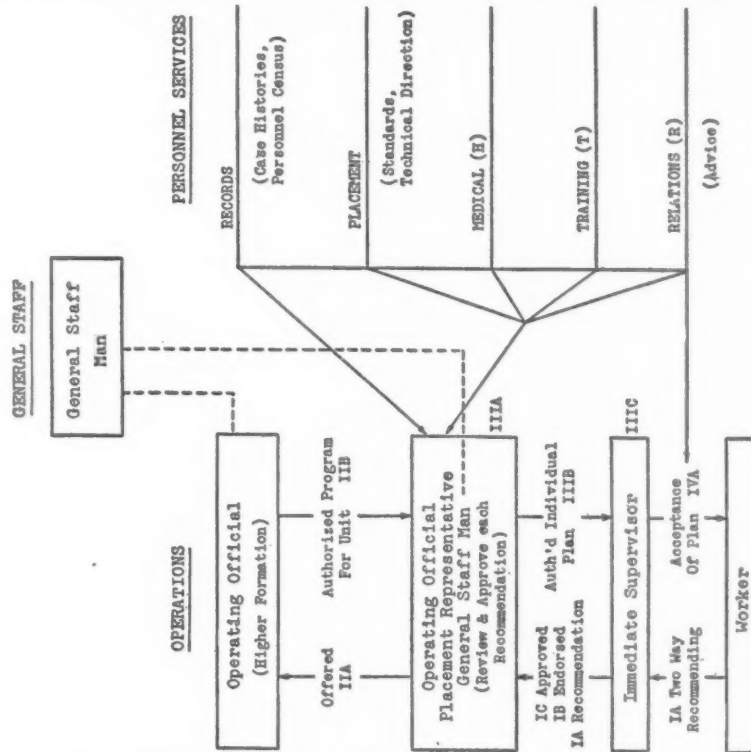
I. Producing a Work Career Recommendation

- a. We examine the man.
- b. We examine the work.
- c. We size up the relation between man and work and evolve a Work Career Recommendation.

In examining the man we focus in turn on three aspects, or factors. These are first, Health and Energy, or what we call the H factor. This includes consideration of his age and a study of his physical and mental condition, as judged by medical examiners and advisers combined with evidence of sickness absence and evidence of his energy output. It is ascertained, for example, whether his work performance shows him to be

SKETCH OF PERSONNEL REVIEW PROCEDURE

THROUGH WHICH 4 STEPS IN PLACEMENT PLANNING ARE COORDINATED



I Step 1 Leading to Work Career Recommendation.
 II " 2 " " Work Opportunity.
 III " 3 " " Placement Plan.
 IV " 4 " " Acceptance of Plan
 Capital Letters A, B, C = Sequences in each Step.

FIGURE 2

FOUR STEP PHASE IN PRODUCING A PLACEMENT PLAN ACCEPTED BY THE WORKER

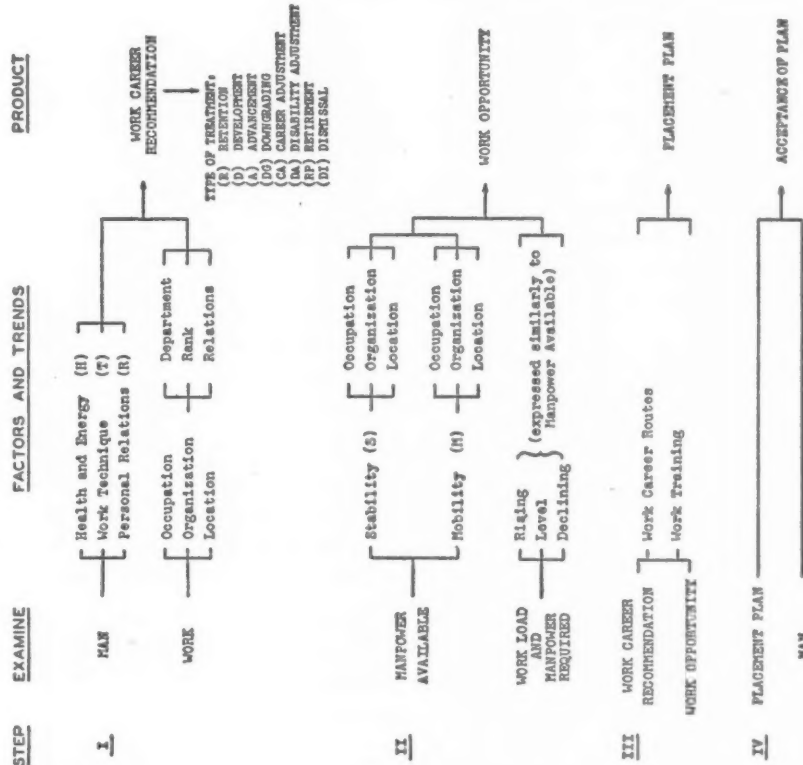


FIGURE 1

a sprinter or a marathon runner, in either muscular or intellectual work. The second element is Work Technique, what we call the T factor, symbolizing technique. The actual work skills he has demonstrated are revealed, or failures in actual performance, or in his products. These vary by occupation. For example, if he is a craftsman, it is determined if he is more effective with light or heavy tools, or more effective in repetitive mechanical operations, or work involving reasoning out the likely causes in the breakdown of a machine. If an engineer, it is determined if he appears to be more successful with problems of spatial design, or problems of mechanics, or more abstract problems involving advanced mathematical reasoning. The third element is Relationships, what is called the R factor. This turns the spotlight on his demonstrated relationships with other persons in work situations.

As we turn toward the work for which he may be best suited, we consider first the occupational group. Here, we use the occupational grouping of the United States Employment Service, modified to suit the work of our organization. We ask, "Is he likely to be most effective and happy as a craftsman, a production worker, a salesman, a clerk, a specialized or technical worker?" Having identified the main occupational group we then refine the judgment down to what position within the group or at least what type of position. For example, if he looks like a candidate for management work, we ask, "Will he be more effective as head of a specialized service, or is he cast for general operations?" If the latter, we then discover if he might be more effective in a staff relationship or a line relationship. Gradually the kind of position emerges. Then we move on to consider the department, branch, or section in which his capabilities may be best developed and expressed. This judgment leads naturally to the next, "At what level of the organization?" This may include actual rank, if management in a line relationship is in mind, while for staff work it will be governed by judgment as to whether the work should be at headquarters, or out on the firing line, or midway. Finally the locality will be considered. Here, matters of home ownership, children at school, community interests and other links with geographical locality are looked into.

With this accumulation of evidence and hypothesis behind us, we emerge usually with a Work Career Recommendation. Often there are alternatives, with a first, second and sometimes a third choice. The Recommendation is expressed briefly in terms of the Target Position; the Department, Branch, Section; the Lo-

cality; the approximate date on which the man should be ready to enter the Target Position. The date may be ten or more years away, or quite close, or the man already may be on his Target Position.

A final and most important item is the recommended type of treatment for which the Work Career Recommendation calls. This is the prescription aspect following the diagnosis. These are the common types of placement treatment which have come out of our use of this procedure.

- R Retention—To be retained in his present position, as a terminal point. This means that the worker is now on the Target Position.
- D Development—To be developed by movement within the Career Route in which he now is, towards the terminal position of that route, which is the Target Position for him.
- A Advancement—To be promoted to a position of higher rank, either directly or through a series of moves.
- DG Downgrading—To be reduced to a position of lower rank; this may mean backtracking on his present Career Route, or dropping into another route, directly into its terminal position, or toward it by one or more moves.
- CA Career Adjustment—To be moved over into a different type of work for which he is more suited (for reasons other than disability).
- DA Disability Adjustment—To be adjusted to a suitable position, if temporarily or permanently disabled.
- RP Retirement—On service or disability pension.
- DI Dismissed—To be dismissed from the organization.

This type of information item is most important for these two reasons. First, it is the bridge between the Work Career Recommendation and the Placement Plan for use in records of the individual worker. Second, summaries of these types of recommended treatment indicate the man power potential of the organization, in terms of its stability, its state of development toward stability, its potential leadership, its degree of vocational maladjustment, its weight of disablement, its likely loss rate due to retirement. This constitutes a valuable personnel census for management use. It goes far deeper into the situation than the usual type of employee census which is limited to items of age, service, rate.

II. Producing a Work Opportunity

- a. We examine man power available.
- b. We examine trends in work loads and man power requirements.
- c. We size up the relation between available man power and trends in work load expressing future man power requirements and create Work Opportunities suited to the Work Career Recommendations.

By this new type of personnel census just mentioned, we have now a tool to use in identifying the Stability Factor in the man power situation. This factor is the percentage of workers of the group under study who have been recommended for Retention Treatment, of the total workers of the group. This factor may reveal occupational stability, organizational stability by department or rank, or stability as to location. Except for normal losses from this group of R men, due to causes other than acts of management, such as death, quits, military service draft, we can count on these men remaining on their present work, or within their present organization unit, or within their present location. Similarly we can examine the Mobility Factor and break it down by reasons or types of treatment recommended, such as Advancement, which is a form of internal mobility versus Retirement, by which the worker is lost to the organization.

Then looking into work load trends as seen by the Planning or Programming groups, or departments, we see where there will be rising or falling demands for workers, of each occupational group, sub-group, position, within each department, branch, section, at each level or formation of the organization, in each locality.

When these two batteries of information, of man power available, and man power required, are brought together work opportunities for moves of men become evident. Each Work Opportunity may then be linked up in chain formations, by which series of moves may be planned. Inter-exchanges of men create more opportunities.

III. Producing a Placement Plan

- a. We examine the Work Career Recommendation.
- b. We examine the Work Opportunity.
- c. We size up the relation between Recommendation and Opportunity and formulate a Placement Plan.

This brings us down to short-range planning. The Recommendation is in terms of what is desirable. The Plan is in terms of what is possible within that which

is desirable. It looks ahead only so far as the work load and budgetary system of the organization permits, normally for twelve months, or the calendar year, modified each quarter.

The Plan itself expresses the move planned for the worker. It may show also the actual training course which the worker will receive as he enters into the new position. Such training courses can be standardized and catalogued with symbols of classification. Such tooling-up in advance permits the Plan to move into action smoothly, at least so far as guaranteed work technique contributes to this step.

At this point we pay special attention to factors which will affect the man's acceptance by the group. We consider particularly his seniority within the company and department, his past relations with members of the group, the age composition of the group, its modes of behavior. The Plan is moulded always with that group picture in mind.

IV. Producing Acceptance of the Plan by the Worker

- a. We examine the Plan.
- b. We examine the Man.
- c. We size up the likely reaction of the Man to the Plan, and proceed to win his acceptance of the Plan.

In examining the Placement Plan for a worker, we are led back to the original Work Career Recommendation, to the reasoning on which the Recommendation was built. We are led back also to the Work Opportunity and study closely to what degree the Opportunity is designed to implement the Recommendation. For example, we note whether the intended move will take the man into his Target Position which is called a Terminal Appointment, or whether it is to carry him along one step within a career route, which is called a Via Assignment. We note particularly the Type of Treatment Recommended, which sums up the purpose of the planned move. The emotional significance to the worker is quite different, for example, as between Advancement and Downgrading Treatment. We must be ready for the emotional state the statement of the Plan to the worker will induce.

Then we re-examine the man's work and social history. We try to see him as a total and unique personality, conditioned by all his past experiences. We go back once more to the H factor, to the T factor and the R factor, as we review his health, his technical skills, and his social relationships with others. Mentally we project him into the new work situation.

At this point, we present the Plan to him. This is done usually in a series of interviews and sometimes informal conferences. Generally the plan is presented to him initially by his immediate supervisor, with an invitation to think it over. If the move is a major change for the worker, or if it is his first principal move in the organization he is asked to sit in with a staff man representing the management official for the departmental unit, and a placement official. At this informal meeting the subject is talked out. If he approves the Plan as suggested, or after it has been modified at his desire, he then meets his new supervisor. It is this supervisor's responsibility to acquaint him clearly with the objectives of the new work and with the human relations situation within the group he is to enter.

When he has fully accepted the Plan, the fourth step in this Planning Phase has been completed. Such acceptance requires on the part of the worker an intellectual understanding of the demands which the new work situation will make on him, in energy, in work technique and human relationships. It requires an appreciation of his own abilities to meet or adjust himself to these demands. It requires his emotional willingness to so prepare or adjust himself. This acceptance carries him up to the point where he is able and willing to accept a large share of self-responsibility for guiding himself into and through the new situation, inviting the help of others or direction by his supervisor only

when he himself cannot develop or find the necessary aids.

Rejection of the Plan by the Worker and Appeal Through Representative or Higher Official

If, as sometimes happens, the worker is unwilling to accept the Plan he may put the issue into the hands of his representative, if he is a member of a group covered by Employee Representation. The case becomes an individual grievance, subject to normal grievance procedure. Or, if he is a supervisor or associated specialized worker, not covered by Employee Representation, he may take the issue to an official of higher rank than his supervisor.

The issue is resolved either by the Worker being supported in his rejection of the plan, in which instance the Planning Phase outlined here has not been thoroughly applied at all steps, or it may be resolved by the worker accepting the plan as it stands, or in modified form. With every such issue a solution must be found; it cannot remain to sour the man or the organization. Some Placement Plan must finally be accepted. When that point is reached, the Plan goes into action.

NOTE:—This concludes Part I. A description of the system by which the organization of work, men and methods is established and used, how these elements are co-ordinated, and how control procedures are applied to ensure effective placements, will appear as Part II in a future issue of ADVANCED MANAGEMENT.

Work Planning in Industry

(Continued from page 101)

formation to measure progress, see what difficulties are being experienced and to know where they can best lend their aid in helping out laggard units.

I also believe that as each project is completed a formal report should be prepared for discussion and approval. This report will also serve as a guide and book of instructions in placing the recommendation into effect.

These progress reports, plus personal contacts by the co-ordinating units and the operating heads, point out situations which may cause a change in course or even involve a major policy change to meet a given condition or situation.

The important point is that in the development of such a Work Plan you have taken the first major step in properly organizing and controlling your business. You know what has to be done and you have laid out a

program to accomplish it. If done in a thorough and competent manner and followed up diligently and aggressively, you are well on your way towards the successful operation of your business. Work Planning requires that you:

- Define your purpose;
- Analyze your problem;
- Seek the facts; and
- Plan carefully.

You will thus accomplish your task in Logical Order—Accurately—Quickly—and Economically. It is a vital tool of management at any time, and especially so if we are going to meet the production demands of war within the time we must meet them to bring this war to a successful conclusion at the earliest possible moment.

Free Enterprise Must Save Itself

By JOHN E. WEBSTER

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THE world's greatest need is a successful democracy. A successful democracy would give its people such a high level of consumption that it would be the envy of all the world. It would remove the mass appeal of all the totalitarian slogans. What, then, is required of a democracy that would be sufficiently successful to cause its voters to maintain it?

The first requirement is that all the people must be allowed to participate in the use of the industrial resources of the nation so that they may earn their livelihood. Dr. Nourse of the Brookings Institution has stated in his book *Price-Making in a Democracy* that the owners and managers of our business enterprises determine, through their control of prices, what utilization our people can and do make of our industrial capacity. Our democracy is endangered when prices are so set that they give us an average capacity utilization of but 64 per cent of capacity and a corresponding unemployment. These conditions obtained in the 1929-38 decade. While other requirements of a successful democracy can be listed, it is safe to say that if we could get prices that would result in nearly full employment and a corresponding utilization of our resources the other factors needed to maintain a democracy could be retained or obtained without serious difficulty.

A Self-Sustaining Peacetime Economy

A full employment peacetime economy which is highly industrialized can be self-sustaining only when this full employment provides the people with a sufficient earned income to purchase the great quantities of goods and services resulting from the full employment. A part of this earned income will be profits and capital earnings but these must also be currently spent if the economy is to be kept in balance. If all business is to release as much effective buying power as it absorbs, each unit must do so. Therefore if any industry or any producer is absorbing more of the effective national buying power than it currently releases it is, to the extent of this deficiency of released buying power, a parasite on other industries and on the whole economy. This

test of the performance of each business unit should be applied at near its full capacity production as that is the only rate of operation that will assure the safety of democracy and the free enterprise system.

We then have this paradox; the motive of business, as a group, is to release a maximum volume of buying power but the motive of the individual producer is to release a minimum of buying power. It is essential that business, as a group, organize and discipline itself to make the group motive prevail.

Many businessmen cling to the belief that full employment can be obtained through individual action. But the individual company can get the necessary expansion in sales in response to price reduction only if all industries simultaneously reduce their prices. To this end organized action is required. The National Association of Manufacturers, in their booklets, stated that correct prices would give full employment, but they also state that the desired prices must come through "normal economic processes" or individual action.

A study of the break-even chart accompanying this article of all American corporations for the years 1929-1938 inclusive gives us a picture of how our economy has been working under "normal economic processes." The total cost and gross income lines are based on data from the National Bureau of Economic Research and United States Treasury reports. The unit cost curve is the ratio of these two. Other lines are approximations. The percentage of capacity utilized is based on the Brookings report of 80 per cent for 1929. The break-even point is at 60 per cent for the average industry. Some industries break even at as low as 35 per cent while others do not break even at all. Above the break-even point profits increase faster than production. Below the break-even point industry pays out more than it takes in because some factors in costs have developed a special privilege in distribution and "get theirs" even though the producer is in the red.

During the last ten years the center of gravity of the cycle swings has been at near 64 per cent of the 1929 capacity. Savings, due to the low profits and the consequent restrictions of high incomes, were limited to

approximately the amount spent for new capital construction. A rate of income distribution to the various groups contributing to production was automatically obtained that would sustain that rate of production. The difficulty is that this self-sustaining income distribution was obtained at an average production of but 64 per cent of capacity. If we could get this same income distribution at 95 per cent of capacity we have every reason to believe that this high rate of production would be self-sustaining. The average income of both capital and labor would, in this case, be increased about 50 per cent. This desired income distribution would have been obtained at 95 per cent capacity if prices had been sufficiently reduced to have given a break-even point of about 83 per cent of capacity. In other words we get the rate of production and profits for which our prices are set. This is practically the same statement as that attributed to Dr. Nourse on the first page of this article except that profits are included.

The unit cost curve shows that costs change with every change of production. Our endeavor to keep stable prices based on varying costs must result in economic instability.

Those who still doubt the healing power of correct prices should give attention to the following taken from *Toward Stability* by Professor Sumner H. Slichter. As it merits several readings, please read it first as written by Professor Slichter omitting words in parentheses. Then read it again, reading the words in parentheses and omitting the words in italics.

If prices were a perfect instrument for keeping industry adjusted to changing conditions, fluctuations in business would not matter, because they would be followed by compensating, instead of aggravating, consumer spending. No matter how sudden and unforeseen the changes in conditions, (if) prices (were) *would instantly adjust themselves so that* (adjusted) the total volume of spending in the community would never drop. There would be shifts in production and employment as demand changed, but the adjustment of industry to a changing world would never take the form, as it now does, of a drop in the total volume in spending, production and employment. The fact that drops do occur in spending, production and employment simply reflects the fact that prices *do not move* (are not adjusted) promptly enough to eliminate maladjustments before the maladjustments themselves produce new maladjustments.

The meaning is not changed in the two readings, prices have simply been changed from the active to the passive form. The new maladjustments mentioned include the farm, the coal, the labor and all other problems that re-

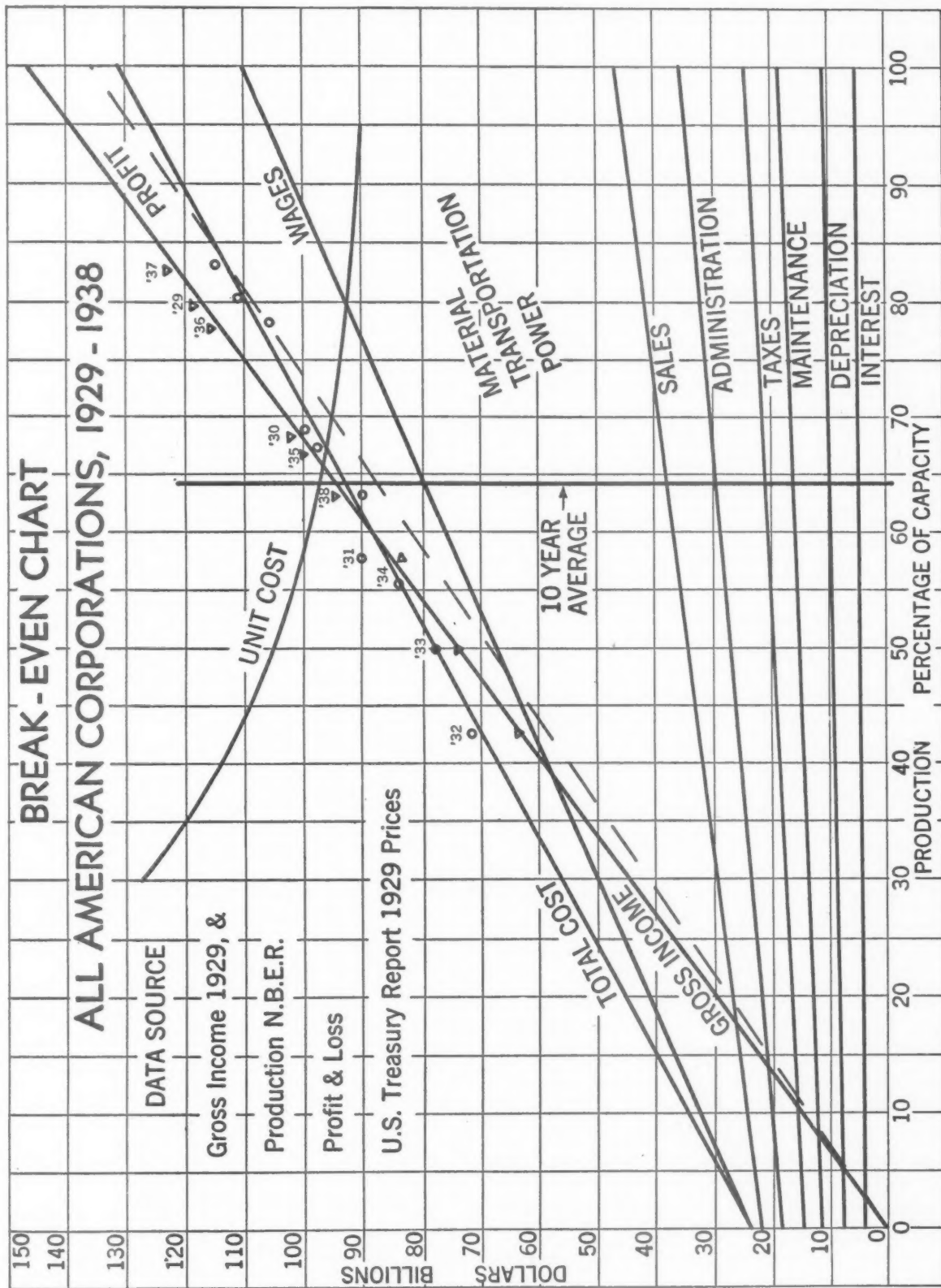
sult from the scarcities of markets and jobs which in turn result from production-restricting prices.

If some individuals or some industries refuse to operate their business so that prices may be adjusted to sustained full employment, they will have to be brought in line by some authority. If the government is this authority, we no longer have the free enterprise system; it becomes some form of state capitalism. The only authority that can bring the offenders in line and still retain the free enterprise system, would be the authority of a voluntary organization of all business units. Business leaders never felt so frustrated as now. They would welcome an escape from bureaucracy and regimentation which is smothering them. In spite of the frequently made statement that businessmen would not submit to group control, there is reason to believe that they yearn for strong, sound, constructive leadership. A score or two of our national leaders in business, politics and economics, with a sound plan and proper publicity, could establish a united front of all enterprise which would make our mass freedom and living standard the envy of all the world.

Organizing Business for Self-Discipline

To save Free Enterprise we must have an over-all business association dedicated to the task of building and protecting a market that will continuously absorb near full employment production. This association, in order to solve the problem of unemployment, must have the authority to require each producer and each industry to do its part. We must give up individual play for team play, always remembering that under team discipline the individual as well as the whole team has the greatest opportunity for success. Freedom and discipline are not contradictory terms. Our most cherished freedoms are based on individual and group self-discipline. Team play requires an umpire and the umpire must act instantly in accordance with accepted rules. In our games the rules are formulated and accepted by the players. Business is our greatest and most interesting game. Impartial decisions, made in conformity with rules formulated by business leaders to promote their own and therefore the public's advantage, would be rarely disobeyed. Sound self-imposed rules require few administrators. The administration of arbitrary government rules require large growing bureaucracies.

Let us call this voluntary but authoritative body the National Price-Limiting Association. If this association is to succeed those who found and administer it



must subscribe to a body of principles something like the following:

1. The success of Free Enterprise requires high mass prosperity. This mass prosperity must be *earned* by the participation of our people in the production, transportation, selling and servicing of the products of our industries.
2. The creation of mass prosperity is as much a responsibility of business as is the production and distribution of the products of our industries.
3. The market of the product of each industry is largely determined by the price and sales policy of every other industry. Therefore the managers of each industry are not "minding their own business" unless they concern themselves with the price and sales policy of every other industry. This may effectively be done through their representation in the National Association.
4. Any producer or any industry that absorbs more of the effective national buying power than it currently releases is detrimental to the interests of all other producers.
5. There is nothing that the owners of business, as a group, can do to promote their own long pull advantage which will not also promote mass prosperity.

The success of the National Price-Limiting Association would depend on the soundness of the rules adopted. To date neither our business nor our economic leaders have agreed on what these rules should be. No one has ever written a definition of a fair wage or a fair price. We only know that prices and wages must be so set that they will encourage, not restrict, production.

A convention of men who believe in the above principles would formulate a code substantially like the following:

Industrial Code

- A. Objective. Continued full capacity production of wanted goods and services.
- B. A uniform base wage scale.
- C. A uniform price-making policy. All prices to be based on costs at full capacity production with mark-ups as uniform as possible. (Consideration must be given to variations in efficient marketing costs but slight consideration should be given to costs of high-pressure selling.)
- D. The margin of allowed prices above full capacity costs to be gradually lowered until 96 per cent to

98 per cent of all potential workers are working efficiently. At this point full capacity production might be considered to have been attained.

- E. Uniform accounting methods.
- F. Honesty in advertising.
- G. Strict rules governing deferred payment selling—the purpose being to keep interest rates low and outstanding obligations uniform.
- H. Goods produced under this code to be so advertised and labeled.
- I. No penalty of any kind to be attached to selling at prices lower than those authorized by the Association. Free enterprise demands free markets.

This code is an attempt to outline the simplest possible working rules for American industry that will attain the stated objective.

The suggested Association would be composed of representatives of all present business and trade associations. The number of voting members of the national group would be proportional to the total employees in each group plus the total investment in dollars divided by a suitable constant. The voting members would elect a governing board or single administrator having powers similar to those of Judge Landis in baseball or Will Hays in the motion picture industry. All meetings would be open to the public, including representatives of the government, the press, organized labor and consumer groups.

The Association executive would request each trade association to submit a break-even chart similar to the one shown here, of enough of the most efficient units in the line to cover at least 75 per cent of the capacity, also a composite break-even chart of these units. A comparison of the above reports would show how far various prices were out of line and the variations in the cost of distribution.

Balanced prices are the first essential to inter-industrial co-operation and the only yardstick that can be impartially used in equalizing prices is the full capacity cost of the products of each industry. Based on the full capacity costs obtained from the break-even charts, the Association would publish suggested price adjustments needed to equalize all prices. Before these suggested prices were made official, public hearings would be held in which the representatives of each industry would be given the novel opportunity of studying and protesting prices suggested for other industries as well as for their own. The representatives of each industry would insist on being assured that they would be com-

pensated for accepting *reduced* prices for their goods by an increased volume which would result from similar price adjustments on all other goods.

After these hearings, a corrected list of price adjustments would be published giving the per cent reduction each industry would be required to make in its average price. Each industry would assume the responsibility of making the detailed price changes needed to bring the average of the line to the desired level. While these detailed price changes can be easily made by the industries with their own men, any outside agency would require an enormous staff of clerks and accountants. Outside control would result in endless bickering, delay and court trials which would nullify the control. As stated by Professor Slichter, effective control must act instantly at the first evidence of need. Some price adjustments requested by public service commissions have been before the courts for ten years!

The NPLA should be organized before the war is won. There is real danger that we will be lured into a state of false security by a postwar boom that is liable to result from an artificial market that is now being created. \$6 to \$8 billions normally invested in deferred payment purchases is fast returning to banks and investment companies. Farm and home mortgages are being paid. Bonds are being earmarked for autos and refrigerators. Inventories are low and durable goods are wearing out. Plants will need to be converted from war work. The government is in the mood to spend. We will desire to succor an exhausted and starving world. But we have had booms before. They are all built on foundations of credit which cannot last. Uncontrolled boom prices have never given a currently earned income distribution that will sustain high production. The NPLA would be a powerful factor in preventing inflation during and after the war.

Postwar prices of consumer goods, durable goods and housing should be kept at a level that will quickly bring these industries to maximum prewar production. As a guide, the NPLA administrators would then set up a schedule of re-employment, based on the estimated maximum rate that plants can be organized and men trained. When approximately full employment is obtained, the industrial productive payroll will be the vital index. This payroll is always proportional to the volume of goods in production which is the volume purchased, so this payroll, with a constant wage rate, is the index of employment, production and purchasing power. An estimate could be made of the rate that this payroll should be increased to absorb the inefficient workers in

other lines and to provide for population increase. Any failure of this payroll to meet this estimated increase would be a signal to lower prices. An effective control functions instantly at the first evidence of need. By self-disciplined teamwork, business leaders and business leaders only, can make prices the perfect instrument for maintaining full employment.

Advantages and Objections

The plan proposed in this paper would, through price control, limit savings to the actual need of new capital construction. Capital for public improvements would be obtained through taxation authorized by the people. In either case, assuming full employment, labor diverted to public improvements will reduce the volume of consumer goods produced. With voluntary price control, the people will completely determine what is produced. They will determine private production through their open market purchases, and public improvements through project approvals. All production and construction will be carried out under the profit incentive and, therefore, will be efficiently done, thus giving the maximum living standards and profits.

There is advantage in high prices only when these prices are higher, in reference to costs, than average prices. If the representatives of all industries were all in one room, monopolistic prices in any industry would not be tolerated. No other group has both the motive and the power to adopt prices, and rules to enforce them, that will give full employment. Business, to perpetuate Free Enterprise, must do one thing and one thing only; namely, prevent itself as individuals and as organized groups, from restricting the constructive effort of other individuals and other organized groups.

The government cannot do this. The motive of the politician is to stay in office. This can best be accomplished by catering to the demands of minority pressure groups. Even with the proper laws, they could not be effectively enforced through court action where months, or even years, are required to reach decisions. Immediate, umpire decisions are necessary. If quick decisions are made by government agents we have a government of men, not of laws, which democracy requires. With the National Price-Limiting Association in control, our antitrust laws would not be repealed. They would soon be found unnecessary.

Hourly wages have received nearly all the attention of our labor leaders. The other two factors which make up real wages; namely, hours of employment and

consumer goods prices would be taken care of by the plan proposed here.

High-pressure selling, in many cases, does not result in high profits and is, therefore, a form of inefficiency rather than a cause of unemployment or the business cycle. The first concern of the National Price-Limiting Association would be to get full employment. It should then undertake to eliminate the inefficiencies of selling by gradually lowering the allowed prices in the lines where these inefficiencies appear. Productive workers are time studied to save seconds, but salesmen often spend hours waiting for or chasing after customers. It is just as important to the consumer to have efficient selling as efficient production as he pays for both.

Several critics of the plan proposed here have feared that it would force sales below costs. We must remember that effective purchasing power goes up as production goes up. With no low price limits the money lost on the less desirable goods will be available for the purchase of the more desirable at more than the average profit. No free economy can assure that all goods will sell at any fixed relation to costs, as some have a greater customer appeal in proportion to their cost than others. Each producer must be rewarded in proportion to his ability to satisfy customer demands. Under the system proposed here no worthy reward to enterprise, good judgment and efficiency will be lost and keen competition will be restored.

The average investor will profit by the adoption of uniform pricing policies that will result in full capacity volume in all his corporations. There should be a national organization of stockholders which should recommend to its members that they petition the directors of their companies asking them to participate in the formation of the National Price-Limiting Association. In sending their proxies, stockholders should assure themselves that their stock will be voted for directors who favor this industrial co-operation. Security holders are fast losing control of their properties. Only through co-operation can they regain and retain control. They have more at stake than the individual managers.

The formation of a National Association based on the code proposed here would create favorable conditions for the formation of new enterprises by new groups or by individuals. These new entrepreneurs would and should take full advantage of any evidence of staleness in the old organizations. The market would be always open to those who could make better goods at lower cost.

The big test of the National Price-Limiting Associa-

tion as outlined here is: can it be kept open-shop or non-monopolistic? We would need to depend on the following:

- A. The purpose of the NPLA, as outlined in the code, is to obtain full employment by the establishment of low prices.
- B. The code requires that there be every encouragement to those who can and will sell at prices below those authorized.
- C. All meetings are to be open to the press, labor leaders, government agents and consumer groups. At the first signs of agreements in restraint of trade the antitrust laws would swing into action.
- D. The owners of industry, as a group, have all to gain by maintaining non-monopolistic policies. This is due to the fact that their income is determined by production and production is determined by mass prosperity and managerial efficiency. Maximum managerial efficiency can be obtained only if the posts of management are open to any who show superior qualifications. A closed shop self-perpetuating group of managers will soon become stale and production will suffer. This is why the self-perpetuating managerial group, as described by Mr. Burnham in *The Managerial Revolution*, would have to suppress the masses and take over all political power. Only a suppressed people will submit to state monopolies. All rights of private ownership would also be eliminated. Stockholders should, through a national organization, insist in the managerial co-operation in market building.
- E. Even the managers, not necessarily as individuals but as a group, will profit more under open-shop Free Enterprise control as there is more profit and greater security in leading a free prosperous people than there can be in bossing a suppressed poverty-stricken people.
- F. There is every reason to believe that Free Enterprise, freed from production limiting prices and special privilege, can provide full employment or near enough full employment to regain and keep popular support. Our workers must be convinced, through proper publicity, that full employment under Free Enterprise is a far different thing from full employment under the despotic rule of bureaucratic government. In the one case the workers will have the opportunity to work as many hours as they wish with the most efficient tools and manage-

(Please turn to page 140)

Some Aspects of Non-Financial and Financial Incentives¹

By HAROLD B. MAYNARD

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TODAY when we are all vitally interested in increasing the production of war goods, it is fitting to discuss the subject of incentives, both financial and non-financial. It is not my purpose to champion any particular wage payment formula or type of non-financial incentive, but rather to present a summary of what I have been able to observe of the comparative effectiveness of financial and non-financial incentives and to point out some of the factors that management must consider when financial incentives are used.

Of the two types of incentives, financial and non-financial, the financial incentive is by far the more effective, assuming, of course, fair and competent administration. There is no reason why the choice should be of one *or* the other, however, for both types of incentive may be used in combination with greater effectiveness than either alone. A good sound wage incentive system coupled with various kinds of non-financial incentives will do more toward insuring a steady flow of war goods than any other procedure which has as yet been suggested. Let us examine some of the factors which lead to this conclusion.

In the first place, non-financial incentives although valuable are not by themselves enough to insure maximum production. Every American citizen has today one of the strongest non-financial incentives which can well be imagined for doing his utmost for the war effort; namely, the defeat of the powers that would enslave him and the preservation of a way of life which he has found good. Faced with the alternatives of slavery or freedom, he unhesitatingly chooses freedom. He says that he will do everything within his power to help win the war, and he means it. Yet he cannot help but be influenced by other factors such as political considerations, loyalties to local groups, desire for personal advantages and the like which tend to retard the actual effort which he makes. The war has shown that even the strongest non-financial incentive when

applied to the country as a whole is at best only partially effective in securing maximum individual effort.

One of the principles of incentives is that the more direct the relationship between the effort of the individual and the return which he receives, the stronger is the incentive. Therefore, as the size of the group is reduced, the effect of the incentive is strengthened. There is less of the willingness to "Let George do it" and more of the desire to pitch in and get the job done. Hence, if instead of saying to a man "You will preserve your freedom if you help your country" we say "You will help your company to win national recognition if you push its production to new heights," we are likely to strengthen the appeal as far as the individual is concerned even if "winning national recognition" is a less lofty and less far-reaching objective than "preserving freedom." Hence, the immediate winning of a Navy E may be a stronger non-financial incentive as far as the individual is concerned than the ultimate winning of the war.

When this thought is carried further, it will be seen that non-financial incentives which single out the individual for recognition are the strongest. Their strength, however, will depend a good deal upon the nature of the recognition and the nature of the individual. Some men will be inspired to greater effort by special lapel buttons, certificates of excellence, or even by being presented with the well-known key to the private washroom. Others will look upon these honors as transitory and even meaningless. Certainly every individual in a group cannot be honored in this manner, for if they are, then no one is honored.

Appeals to pride, emotion, self-esteem, love of power and the like have a certain effectiveness, but the appeal is limited both with respect to strength and duration.

A recent experience served to confirm this conclusion. A small plant working on tank and ship parts was operating on a day work basis. Production was lagging even after Pearl Harbor, and the prime contractors were crying for more production. Various procedures were tried to secure an increase. The plant magazine

¹ Paper presented at the Spring Conference of The Society for the Advancement of Management, Pittsburgh, June 27, 1942.

carried articles appealing to patriotism. A flag was purchased by the operators and dedicated by the head of the union with an appeal for greater production. At foreman's conference meetings, the matter of increasing production was constantly emphasized. Posters were distributed throughout the plant. The suggestion system was revived and revitalized.

In spite of all, production lagged. The company then decided to attempt a form of measured day work. The time required to perform every operation was established by estimate. The performance of every operator was checked and recorded on a performance chart. Good performances were commended and used as a basis for a merit raise. Poor performances were investigated and corrective measures taken. The results which were secured, however, were no better than have been secured from many other measured day work installations. A certain amount of increased production was obtained by reducing delays and lost time as the result of close supervision, but the entire plant operated at a performance level well below 100 per cent, even though the estimated standards were felt to be liberal.

Finally, it was decided that a wage incentive plan should be installed. Careful time studies were made. They showed that the estimated times were about 20 per cent liberal or in other words that a 100 per cent performance on the estimated standards was in reality only 80 per cent on the correctly measured standards. The wage incentive plan was put into effect using the new time study standards. At once performance increased to about 20 per cent above the new standards or to more than 40 per cent above the performance which it had been impossible to obtain on the day work basis.

At the present time, the installation is incomplete. The jobs which are on incentive are going through the shop rapidly. The jobs on day work still lag with performance still below that called for by the liberal estimated standards. The same non-financial incentives have been applied to both groups, but the financial incentive is the one which gets results.

I have followed this case closely, for it offers a good opportunity to check the results of financial incentives. I don't for a minute believe that the men on day work are any different from the men on incentive. In fact, with the installation only partially completed, they are in some cases the same men, working one day on day work and the next on incentive. I don't believe that the majority are holding back on day work with the hope of getting a more liberal incentive rate. Prepara-

tions for the installation were carefully made. The man making the time studies was formerly one of the best machine operators and is known and respected for his fairness. The company has been scrupulously fair in its administration of the plan.

I further believe that the men on day work want to produce. They have sons, brothers and friends in the armed services who write to them asking for more production.

The difference lies almost entirely in the strength of the appeal made by the financial incentive over the non-financial incentive. The man on day work thinks he is doing a good job. He works fairly well and tries to get in a good day's work. If he is held up by lack of material or tool trouble, he is genuinely sorry. But his pocketbook is unaffected, the next turn may have better luck, and tomorrow is another day.

The man on incentive also tries to get in a good day's work. In fact, he tries hard, for he is in business for himself and he wants to show as great results as he can for his day's business. He makes sure that his machine is properly adjusted and oiled so that it won't give out in the middle of the shift. He checks the feeds and speeds to make sure that the night man left the machine set properly. He watches his tools carefully and plans so that he gets the maximum tool life with the minimum of grinding. If he sees that he is likely to run out of material within the next hour, he raises hob with the foreman or the material handler so that the material is delivered before he needs it. He observes how long it takes for the inspector to get over after he has been summoned and then calls him enough ahead of time so that he arrives at the machine just as the cut is finishing up. He may not work any harder than the man on day work, but he works more effectively because it is to his own immediate advantage to do so. As a result, he turns out a great deal more production.

There in simple shop language is the difference between the day work performance and the incentive performance. And what a difference it is, not so much with respect to speed or physical effort applied but with respect to the steadiness of the work, the careful planning, and the conscientious effort to reduce delay.

A few months ago, we were asked to make a survey of the productive efficiency of a small day work plant. The initial phases of the investigation revealed a well-managed shop. Morale was high. The operators appeared to work with a good effort. They respected their foreman who acted as their instructor and leader.

But these observations were based upon subjective impressions. To obtain an objective measure, we obtained production records on certain representative jobs. We then took drawings of the parts to an incentive shop doing a similar class of work and asked them to determine from their time formulas what production they would expect on these operations. It was 150 per cent greater than in the day work shop.

These and many similar experiences gained in all types of industry lead to the inevitable conclusion that financial incentives yield greater production than is ordinarily obtained without their application. Therefore, as a means of increasing our war production, they should be used to the fullest extent. They should, however, be applied properly if satisfactory results are to be obtained.

In the first place, the management that would use incentives must make up its mind not only to be scrupulously fair itself in the administration of the plan but also to take every reasonable precaution to see that those who are responsible for the setting up and operating of the plan do not introduce abuses. There are those who in their zealotry to protect what they consider to be the company's interests will do things which are not within the spirit of fair incentive administration and this must be guarded against constantly.

Almost all good American workmen like incentives if they have confidence in the management which administers them. The tradition of success through one's own ability and efforts is ingrained in Americans, and a plan which offers higher rewards for meritorious performance is in line with this tradition. If workers at times seem to oppose incentives, it is largely because of the shortsightedness of some managements who in the past have indulged in unjustified rate cutting. This created a deep-seated feeling that a worker is only going to be allowed to earn a certain amount before the rate will be cut, and as a result, the worker who has this feeling is inclined to feel that incentives are just another device of management to secure more production for the same or less money. Any worker who has experienced unjustified rate cutting can hardly be blamed for looking with suspicion upon incentives or for that matter even for restricting output.

At the same time, it must be recognized that if restricted production is undesirable under peacetime conditions, it is utterly undesirable in time of war where the national security depends upon the production of war goods. That it is being practiced and the reason that it is are clear from the public statements of or-

ganized labor in which they promise a certain per cent greater production if "piece rates are frozen for the duration." Management must recognize the reasons underlying this attitude and must take the initiative in overcoming restrictive practices and in securing the support of labor for financial incentives as the most satisfactory means of increasing production. One of the things which must be done is to support fully incentive administration policies which are thoroughly sound. In order to establish such policies, it is necessary to understand certain fundamental principles.

There are four major ways in which an individual operator can increase his production. He can increase his skill, he can work with a greater effort, he can plan his work so as to reduce delays to a minimum or he can develop an improved method.

With this in mind, let us examine the workings of the usual incentive plan. When an incentive rate is established, the method used for performing the operation is more or less carefully studied depending upon the time available, the ability of the time study man, the expected activity of the job and like factors. When an acceptable method has been put into effect, the time required to perform the operation is measured by time study. The standard which is established under most incentive plans represents the production which will be attained by the operator of average skill working with average effort and experiencing the normal delays due to fatigue, personal necessities and the like.

An incentive is then offered in the form of extra earnings for production greater than the established standard. It is expected that this greater production will be obtained by the development of better than average skill and the exercise of greater than average effort. If the operator can so plan his work that normal delays are reduced, this is also considered a legitimate way of increasing production. In order to assure the operator that he can go ahead and increase his output and his earnings with security, it is the usual practice to guarantee the rate unless methods, designs, materials or conditions are changed.

When the operator begins to work on incentive, he begins to utilize every means at his disposal for increasing his production. He develops skill, he exerts a good effort and he plans ahead. In addition, however, he also studies the method. If the method was hurriedly or carelessly studied, it is not long before he improves upon it. Even if the method was carefully worked out by an expert methods engineer, he may still eventually be able to improve upon it. Experience has shown that

any method can be improved again and again if sufficient thought is given to it, and the operator who is closest to the job also has the greatest incentive to study it.

When he improves the method, he also increases his output. Whereas, the increase in production due to improving skill and effort is not likely to be greater than 25 or 30 per cent, the increase which comes from the methods improvements may be 50 per cent, 100 per cent or even more. Hence, earnings out of all proportion to what the management expected become possible.

When the operator has reached this point, he must decide what to do. He can cut loose with his new method and earn as much as he can. He can slow down because his new method will enable him to do the job in less time and maintain his earnings at what they previously were. Or he can increase his output somewhat and slow down somewhat and thus increase his earnings to a predetermined point which he feels is safe. What he actually does depends on his past experience with rate cutting, his confidence in the present management and the attitude of the other men with whom he is working.

When the factors which lead to high earnings under financial incentives are understood, it becomes easier to decide what to do about them. At first glance, since high production is wanted above all else, it might seem that the rate should be guaranteed even if the method is improved as long as the improvement is made by the worker. Some companies have actually adopted this policy, and although it is far better than arbitrarily reducing a rate, it is not an altogether satisfactory procedure either to the company or to the operator.

The principal difficulty is that it is not always possible to improve a method on one job as much as it is on another. This leads to inconsistencies in earnings. An operator may, for example, so alter or improve a jig that it is possible for him to earn 100 per cent above his base rate. If the job is of long duration, he becomes used to these earnings. He may even increase his standard of living in the expectation that they will continue indefinitely. When at length the job comes to an end, he may get another job which he cannot improve upon to any extent. His earnings fall to 25 per cent above base. This means an important reduction in income and may actually create a hardship for him if he has contracted financial obligations commensurate with his former high earnings.

Exceptionally high earnings also create dissatisfac-

tion among the other workers. If one operator is able to earn a 100 per cent bonus and others can only earn 25 per cent even though they work as hard or harder, they will feel that something is wrong. They may let it go with the thought that the operator is just lucky, but they may come to believe that he is a friend of the boss, a company man or something of the sort. In any event, they bring pressure to bear upon management to raise the standards of their own jobs so that they too can make higher earnings.

Finally, the situation is not fair to the company. If it is granted that the operator is entitled to earnings resulting from the exercise of his own ingenuity, what of the other operators on the same or other shifts who may also be able to use the improved method. They have contributed nothing to the job, yet they receive as high earnings as the man who originated the improvement.

All of these problems result solely because, when the operator is permitted to receive the benefits of his ingeniousness in improving methods in the form of high incentive earnings, the incentive plan is used to do something it is not designed to do. As I said, an incentive plan is designed to encourage higher production obtained through the exercise of superior skill and effort. And when it is used to pay for methods improvements difficulties are encountered. When a management sees an operator making more than his foreman just because he devised a gadget which took him only a half hour to make (and on company time at that), it is understandable that it may feel that he is earning more than the idea is really worth. At the same time, if management trumps up an excuse to reduce the rate, it is closing the door on the application of improved methods on the part of all of the operators throughout the plant.

This kind of situation has long perplexed management and has led it, often in good faith, to do things which labor has interpreted as rate cutting. With the nature of the problem understood, however, it should not be beyond the ability of management and labor to work out a solution which is fair to both.

One solution which seems to offer great promise after the details of practical application have been perfected through experience in administering it is to pay for methods improvements made by operators in the form of a suggestion award. When the improved method suggested by the operator is put into effect, the job is restudied and the standard is re-established

(Please turn to page 140)

Streamlining Production and Inventory Control Methods¹

By JOHN A. WILLARD

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PRODUCTION control methods which were entirely adequate for prewar conditions have in many cases been abandoned because they broke down under the pressure of war orders. In some cases far from expediting production, they definitely hindered it.

Production control may be simply defined as a technique of providing the right goods, at the right time, in the right amount.

There are five principal subdivisions in the effort of providing an adequate production control.

1. *The Accounting Function.* This covers the statistical development of the amount of finished products, the sub-assemblies, the parts, the blanks and the raw materials required to satisfy sales. It provides the basic facts.
2. *Production Standards.* This involves a knowledge of the capacities of each machine or each bench operator involved in the process.
3. *The Planning or Matching of the Man-Hours Available against the Work Load.*
4. *The Scheduling of the Various Production Loads against a Definite Time Period.*
5. *The Follow-up of Production in the Factory* to make certain that the planned schedules are being met.

It is believed that a simple case study will serve best to bring out the above basic principles involved in providing an adequate control of rate and kind of production as well as the volume and character of in-process materials and parts.

Description of the Product

The manufacturer in the case under study produces high-grade chucks, covering about 100 different models in a full range of sizes. Though "size and kind" offers a fair number of possible combinations, the continuous process lines are relatively simple. This is because a typical chuck has only four classes of parts: body,

jaws, nuts and sleeves. Subsidiary parts are keys and arbors.

Former Plan

The Production Control Plan (if we can call it such) which broke down was quite simple. It consisted of a list of unfilled orders and promised delivery dates. Continuous inventories of blanks and parts in process were not maintained. There was scant knowledge of their exact extent. There was a continual effective personal follow-up of production by a capable stock chaser. No production orders were issued for chuck production; no machine-load sheets were available.

Before the war pressure a good job was done. This was because the primary record was based upon sales needs, which is fundamentally right. The plan broke down because the control was entirely qualitative, not quantitative. Capacities of men and machines were not measured.

Economic runs were not determined for the automatics producing the blanks. Capacities were not loaded quantitatively and the in-process stock was an unknown amount.

New Plan

To get the situation under control, the following steps were taken:

1. Sales and Process Balance records were established. These records show the "Oversold" or "Overproduced" position on each size of each kind of chuck. This position is determined by the following simple formula:

Production orders issued, plus work-in-process, plus finished stock, minus sales, equals factory balance.

"Factory Balance" is a handy term for "Oversold" or "Overproduced" position and the above formula is used not only for primary sales records but for production orders on the process lines as well.

2. Process Control sheets were developed. The Sales and Production Balance Record (No. 1) gave simply

¹ Paper presented at the Spring Conference of The Society for the Advancement of Management, Pittsburgh, June 27, 1942.

the number of chucks of each size and kind that had to be ordered from the factory. The models required as shown by this record were analyzed as to parts and separate process control sheets were developed as follows:

(a) Control Sheets for the automatic screw machines, in order to provide adequate blank stocks. In the manufacture of chucks the first operation on any part involves machining the blanks from bar stock on modern automatic screw machines.

(b) Continuous Process Lines are used after the automatic screw machines and they provide for the production of jaws, sleeves, nuts, bodies and keys—one line for each of these products. The Continuous Process Control Sheets provide a separate record for each of these components.² These few forms—really only five master forms, with subdivisions for style and size—are all alike in general principle. They provide the accounting for sales and for all parts. They give a continuous record of the size of the job to be done. Sales and production are summarized and posted weekly, although individual daily production records are carefully scrutinized.

3. Production Orders for the automatics and for the continuous process lines were established. These formal production orders merely provide a handy mechanism for the blanks and parts scheduling function as well as for follow-up. It is, of course, entirely possible to produce goods without a formal production order, but when one can refer to order number so and so, its content is much more readily identifiable than if such an order did not exist. In addition, the accounting records and the process control sheets are considerably expedited by use of a formal production order.

4. "Blanks and Parts" Cycle Load Sheets were provided. The men or machine-hours required for each specific part are balanced against the capacities available over a two-week period or cycle. The length of the cycle can be varied to suit the production needs of a specific plant. It is seldom wise to use a cycle length of less than half a week and only in particular cases is it wise to have a period longer than two weeks.

It should be noted at this point that each of the Process Control records contains data as to the average consumption of each part per week, the operational rates per hour, the allowances for set-up time, the economic size of order quantity, the average run frequency per

year to satisfy the usage rate and other pertinent data. All of these are developed either from the Continuous Sales and Process Balance record or from Production Standards.

5. Assembly Load Sheets were provided. These co-ordinate the supply of available parts with the assembly orders and serve to match the assembly work crew against the work load.

The above types of records constitute all that can be required to provide a close control of production and of work-in-process materials.

But these records, while self-contained and when in full operation providing their own follow-up figures for exact control, are not enough for full streamlining. In the case in question, as soon as they were developed they were put into immediate use. At the same time, a temporary subsidiary Gantt chart was run on each automatic and each process line to permit a better study of standard process times as well as ordinary and extraordinary delays.

The use of these charts very soon showed two serious bottlenecks—one at the jaw bite milling operation, and the other at the automatics used for the production of the greater part of the jaw blanks. It can be noted here that one of these bottlenecks might well serve to hide the other. A change in available milling machines cured the first problem, while a re-assignment of automatic production schedules relieved the second. In other cases, minor bottlenecks were cured by adding supplementary operators.

The use of the Gantt charts was subsequently discontinued because the bottlenecks showed up clearly in the production control records. However, a follow-up group is at work constantly checking actual process line outputs against standards. The fact is, bottlenecks are one of the most persistent diseases of factory production. The finding and curing of a bottleneck today quite often is only a sign that a new bottleneck has been created somewhere else. This means that a follow-up and searching out of these bottlenecks and a re-balancing of machine capacities against the work load are constantly necessary.

As to the results of applying this method with *no change in machine equipment*, production was increased by 43 per cent.

In addition to the application of the above procedure, a step was taken to make the entire plant more production conscious. There is really no "average chuck" produced. No one chuck represents fairly the average of the line, so a chuck that everyone was familiar with

² Samples of these forms are purposely omitted as they need to be developed from the above "formula" for Factory Balance especially for each specific plant.

was dubbed a "unit chuck." All other chucks were related to it on a ratio basis by comparing man-hours plus machine-hours required. If our "unit chuck" equals one unit, some other chuck might be 1.75 units, so there were posted each day the "unit chucks" produced. It was found that this acted as a strong non-financial incentive to workers to do their bit for the war effort. In some departments there was even active betting as to how much the "unit chucks" could be boosted in a given production period.

One other vital subsidiary benefit from the application of this type of method was the very considerable reduction in work-in-process materials required per "unit chuck" produced. It was found that the more careful scheduling of production requirements resulted in a minimum of stock between operations without serious hindrance to the production.

In another plant recently where a study of this same

character was started, it was found that lack of planning methods had caused this manufacturer to maintain at least three times as much work-in-process between machines as should have been required to keep everything going, and with some margin to spare. It should be evident to almost anyone that a single extra truck of castings standing ready for processing at a milling machine does just as much good as five truckloads.

In these days, when it is difficult to get raw materials, one does not criticize the fact that there may be an ample supply of castings. Nevertheless, these should not be in the aisles clogging the operation of production equipment, and with adequate planning control they would not be. It may be said without exaggeration that proper planning and proper material-handling routines can reduce in-process stock by one-half or two-thirds the amount usually found where such methods are not used.

Comment

(Continued from page 97)

people on the part of departmental managers and bureau chiefs, which no doubt requires a complete uprooting of familiar habit patterns as to what constitutes good executive work.

Indeed, the criterion of a good executive has now become this very ability to involve in a positive and exciting way the talents of those associated with him. And the measure of his quality as a competent executive has become his ability to get results by drawing out talent, giving credit for suggestions and securing a total delivery of output by an exhilarating collaboration of minds stimulated to contribute rather than made resentful and reluctant by the implied command to know one's place and keep within one's own customary duties.

The process by which results are obtained from the use of the elements above enumerated is a process of conference. It is frankly a process of talk, of invitation to suggest, of encouragement to clear away petty grievances, of stimulation to pool productive ideas. Without question, talk takes time, and if there is not wise leadership, it can take too much time and be a substitute for effective action. But there is no substitute for verbal interchange, and no alternative for it if eager and voluntary collaboration is the end in view for planned conferring among those working together as the members of small office groups, of sections, divisions, bureaus and departments.

Also, of course, a distinction must perennially be kept

in mind between the discussion of policy-making with occasional review of potentially wise methods and responsibility for administrative direction. The former process not only can be, but it should be, plural in character. A pooling of thought can help to generate new thought. Executive direction, on the other hand, once agreement has been reached as to a line of action, is or should be always unitary. Many minds can wisely and fruitfully meet in determining the when, why and how of departmental action. Thus the people involved gain self-respect, an advance of status, a stake in the outcome and the essential sense of satisfaction in feeling that their persons and their ideas are being respected. But every normal person also realizes that the direction of going activity must be in the hands of one person. It may become true that the way that person executes may be open to some criticism. But that, at recurring intervals, again becomes a matter for group consideration and review.

The prescription is clear. To bring people together regularly, to invite them to talk about the problems they are working on, to give merit its due, both formally and informally, where fertility of ideas is demonstrated,—these are the tested measures for removing the dead hand of bureaucracy and exercising the stimulating, challenging and productive powers of leadership.

ORDWAY TEAD.

How to Handle Salvage Programs¹

By RAY SCHMIDT

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MOST of industry, despite efficiency in methods and procedures, wastes tremendous quantities of materials.

In some large plants, the difference between profit and loss may sometimes be determined by how well the salvage program is carried out. Many others, including those with small-scale operations, could adopt measures from which both they and the war effort could benefit.

All waste material has some value—steel, iron, copper, brass, zinc, tin, lead, all of them. In the trash pile are countless other things—paper, chemicals, paint sludges, oils, even sawdust.

We are profligate in discarding materials, tools, equipment—everything—while there is still much life left in them.

Now that we must get along with what we have because we can't replace it, it is necessary to break down this long-established practice of extravagance and spread the message of *need* the length and breadth of the land. We've got to get along with what we have because our materials are needed by our armed forces to "Win the War." *now*, not later. We are up against a shrewd, calculating and ruthless combination which is no pushover and it's going to take all-out organization to *win*. It's the only way we can win.

We, in industry, know that it is not always good economy to "Save the Scrap," and I'm not going to try to prove that it is now. It's often cheaper to sweep small parts into the scrap can and use new ones. But today, where are you going to get new ones?

With our modern efficient machinery, we have developed methods which require long lengths or specific widths for automatic feed and so I will not try to tell you it is good economics to make the same pieces from short ends. But you often can't get the prime sizes and you must use the short ends to stay in business.

So there is a new slant today on the necessity of keeping scrap losses down. Before priorities, salvage was entirely on a cost basis. How much money could

be made decided how much was spent on salvage. Now, it's different. Cost, in many cases, is held secondary. Conservation of materials is a matter of self-preservation. In all of our plants, we have consistently hammered the point home to our employees that our very jobs depend on efficient usage of time, materials and tools.

Another way to look at it is this. We are being forced to substitute, in many cases, more expensive materials for those we can't get. That boosts unit cost. So reduction of waste and efficient salvage become even more important. They help maintain unit cost by partly balancing the expense of substitution and the manufacturer is better able to meet competition prices.

Of course, it is said, "These programs are fine for large plants. How about small plants?" Large or small, there are opportunities for salvage that are overlooked. Last summer, I was in one shop after another, where ferrous and non-ferrous materials were badly mixed. Tool steel and nickel bearing steel mixed with machine shop turnings and borings. The man who buys your discards will pay you only for the gross weight at the unit price of the most inferior metal in the lot. Figure it out for yourselves. You know how much of each material you buy. How much of each do you sell? It's just as much labor to handle it wrong as to do it right, and the returns are often surprising.

The organization of the plan to conserve and reclaim materials starts with design and ends with disposition of scrap. For discussion, I have divided the subject into parts.

Simplification	Substitution
Standardization	Conservation and Reclamation
	Disposition

Simplification:

The whole program must be organized from start to finish from your design engineer down to the lowliest workman. Your engineer must design only to meet the requirements of the piece or apparatus. Design around accepted material standards and sizes to elimi-

¹ Paper presented at the Spring Conference of The Society for the Advancement of Management, Pittsburgh, June 27, 1942.

nate short ends. Stay away from scarce and critical materials, unless absolutely needed. Check design to eliminate extra thicknesses, excessive weights. Much of the benefit that might be derived from simplification is never secured because the manufacturing people are used to working to blueprint and specification. The surest way is to plan at the source.

Standardization:

Naturally, the more types and sizes of product, the greater the problems. Sales, engineering and manufacturing executives should be continually studying the possibilities of reducing these. It is possible to make more of a fewer number of types and sizes with much less investment in materials and machines. So is it also possible to train new employees more quickly and eliminate waste time and motion.

There are over 4,000 SAE Steels in existence, of which Westinghouse uses 300. Under present government plans, there will be a lot less. It is no secret that the military strength of the Axis Powers derives from the establishment of a minimum of types and sizes in everything and then concentration on producing these standards.

Subcontracting is also made difficult by our failure to act more quickly along these lines. There are so many sets of standards that much valuable time is lost in negotiating, comparing, etc.

Substitution:

If "necessity is the mother of invention," so it is also the "Father of Substitution." There is today no hide-bound adherence to tradition. We use whatever is available to do the job. Most engineers are only too willing to co-operate, and as a result, many alternate materials are being used where even a year ago the suggestion would have met an indignant refusal. Many of these substitutions will be permanent, and in this sense at least, we shall be securing good from an evil situation.

Conservation and Reclamation:

Here is a field with tremendous possibilities.

The first function of a salvage program is to prevent scrap and here is where your salvage head can make his salary many times over. Remember now, the application depends largely on the individual problem and quantities involved, but large or small, every plant can use part of the program.

When short ends of sheets, plates and bars are used

to make smaller pieces, the gain is equivalent to the difference between the costs of good and scrap material. When you burn lumber and, at the same time, buy new lumber for shipping and packing, the loss is obvious. When you buy excelsior for packing and, at the same time, burn paper, you are overlooking a gain.

When you use any great quantity of oils, paints and varnishes, it is possible to reclaim by simple and inexpensive means a good part of the waste. Particularly, the loss of paint in spray booths is considerable. There are simple, inexpensive ways to trap this waste and convert the sludge into usable material.

Those of you who might operate foundries know how tough it is to secure scrap on the open market. If you also operate machines in connection with the foundry, you should make a thorough study of using your own scrap pile as a source of supply.

When a study of the scrap received in the salvage department shows a high percentage of the same spoiled parts being received, the head of the manufacturing department, if advised, can often change some method to minimize the spoilage. Often tools are wasted by improper use, wrong methods of cutting are employed.

This reflects itself in the kind of scrap received and is always brought to the attention of those who can correct the condition.

This all sums itself up in the slogan, "Never scrap anything from which you can make some other useful thing."

Disposition:

Here is where carelessness or ignorance is responsible for some real losses. I mentioned before how I have found superior grades of scrap mixed with inferior grades. There are many reasons for this. First answer is, "I don't have enough to bother about." Tossed out on the trash pile a little bit at a time, the amount of waste doesn't look like much. But once an effort is made to accumulate the desirable grades, it soon becomes evident how much can be saved. Segregation of certain kinds of scrap can begin usually at the machines where produced.

Then there is the fellow who says, "My first job is to get out production. I don't have time to bother with scrap." Today scrap is a commodity just as a finished product. It is a by-product that we can't do without. A pound of primary substance contains a percentage of secondary material; e.g., ordinarily 100# steel contains 66 per cent of scrap. You can readily see what happens when the scrap is not available.

How many of you would disregard an opportunity to make a dollar by spending ten cents? That's about the average cost of a scrap department. A summary of scrap sales of the East Pittsburgh Westinghouse, shows that sales for 1941 amounted to \$1,500,000.

In the company as a whole, the sales amounted to \$2,500,000. This is an addition to the materials for which use is found at home.

Conclusion:

Let me again repeat, the whole program should originate with the design engineer. He might well consider not only the function of the product, but also the day when it will be scrapped.

Let me also emphasize the importance of the workmen's co-operation. Production workers have little, if any, awareness of the value of the metals they work

with. The foreman's job is to make workers salvage-conscious, and when foremen are thoroughly instructed and sold on the value of a salvage program, they become good missionaries to their workmen. In our company, we use the Suggestion System with good effect.

Salvage programs, backed up by well-planned salvage methods, effectively reduce costs, but, more important now, is that here is a way to conserve vital materials. That's a matter of concern both to us and to the Nation, for *materials will win the war*.

Remember, it's just as true today as it was on the day it was written.

For want of a nail—a shoe was lost.
For want of a shoe—a horse was lost.
For want of a horse—a battle was lost.
For want of a battle—a nation was lost.

Management Planning for Using Women War Workers

(Continued from page 111)

Integrating Policies and Procedures

Policies are of little value to an organization until they are fully implemented by specific procedures. Whatever the size of the company and the number of plants, changes in policies and procedures involved in the replacement of men by women are likely to be sound in proportion to the amount of study of specific departmental needs before the changes are adopted. Moreover, if plant production managers and supervisors have participated with the personnel department in the surveys mentioned above, ideas concerning needed changes in procedure are likely to be suggested as the new policy is being formulated.

In a time of rapid change and unpredictable developments, much can be said in favor of considerable flexibility both in interpretation of policies and in variation in procedures for different departments and plants. However, flexibility within the intent of the policy and

variations from a standard procedure can be encouraged only when the policies are clearly understood by the supervisors who must put them into effect. To assure this understanding and consistent interpretation, policies must be put into writing for foremen and workers to read, and the principal procedures outlined for the guidance of all who administer them.

The replacement of men by women in large sections of industry is a major personnel change which calls for careful planning and continuous observation by management. The haphazard induction of women may result in prolonged learning periods, discouraged and discontented workers, high accident frequency and rapid turnover. The differences between well-developed policies and none, between carefully administered procedures and ones adopted in a hit-or-miss fashion by each foreman are of vital importance to these new workers in industry and to the total pace of the war effort.

Work Planning in Government

Part I

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This article is the result of the deliberations of one of the round tables of our Washington Chapter and is condensed from a forthcoming handbook on work planning in government. The persons in charge of this round table are: Arnie Solem, Chairman; Henry Farquhar, Vice Chairman; Donovan Zook, Secretary; Frank L. Lombard, Editorial Committee Chairman; Julia Henderson and Lieutenant Edward W. Harding, Editorial Committee members. The contributions of Ben D. Mills and Comstock Glaser were also particularly helpful. Comments or additional contributions are invited and will be considered in the development of the handbook.

The Need for Work Planning

ALL about us in federal agencies today are jobs to be done for which the old methods of management are no longer adequate. In too many agencies the staffs have a sense of frustration, as if those jobs are too big; too complex; and nobody knows how to get them done.

This situation is quite understandable and does not imply any lack of confidence in the ability of the government to get a job done. There is genuine and widespread interest today in the improvement of governmental administration. In the past decade government has grown in size and complexity with almost incredible swiftness. It could not be expected that the techniques for doing these large, complex jobs would be developed before the need was at hand. Now that the war job has given the staffs in Washington an added earnestness and energy, it is hoped that the needed tools of management will be developed.

There are those who claim that scientific management has already provided us with the necessary technology for managing large, complex organizations. That is true only to a limited extent. Even the best of scientific management in industry must be carefully adapted to the needs of government. For example, the work plan and the flexible budget of industry are built around profit controls. In government we have only made a beginning in measuring the results of our operations as they are measured by profit and loss in industry.

What is perhaps the most significant contribution of scientific management—precise and objective planning of work to be done—is now just getting away to a good

start in government. Because of the need for requesting funds for a year or two in advance, there has always been a need for some sort of advance planning in government. In some agencies the budgetary process and the budget document itself, with its supporting justifications, have partially answered the problem of work planning. This is a considerable extension of the theory of public budgeting and the lack of precise schedules of work in such materials have made them fall far short of scientific work plans as a management tool. The new type of work plan, such as discussed in this article, is built up precisely and from an operating point of view. It stems definitely from scientific management.

What has perhaps delayed the full realization of scientific work planning in government more than any other factor is the lack of concrete, practical techniques, suited to the needs of government. We have just not had the blueprints for making scientific work planning a down-to-earth reality. It is that situation which the pamphlet on "Work Planning in Government," of which this article is a part, seeks in some measure to remedy.

Administrative Responsibility for Work Planning

The top administrator and his line assistants

The boss is the key to good work planning. A work plan will be a living, vital thing, playing a commanding role in the unification and direction of an organization only to the extent that the leader of the enterprise clearly conceives goals and puts the force of his personality and interest behind their achievement. Work plans must be brought to pass by the top executive and

performance under those plans must be followed up personally by him, else the "work" part of a work plan becomes a mere figure of speech.

As chief of the line officers the agency executive has, then, the broad gauge responsibility for over-all leadership. While subordinate line units must carry out the plans as approved, their duties do not consist solely in execution. It is on operating personnel that the administrator must rely for much of the practical data and advice which makes for a really workable plan. Subordinate line officers can and should offer, for consideration, suggestions as to reorientation of effort, the abandoning of present projects and the undertaking of new ones. Subordinate line officers are obligated to adapt, with whatever assistance they have available, the agency work plans to their particular units and develop detailed sub-plans for their units. Particularly in those agencies whose work is largely professional in character, the line should participate as much as possible in the work planning process. In small sections or divisions of an agency the line may draw up their entire plan, with only nominal guidance on general design and on the scope or priority of work to be undertaken. Such participation naturally makes for better acceptance of the work plan. It is use of the most effective methods for making internal administration a truly democratic process.

Securing Participation of the Field

While the importance of securing co-operation of regional and field personnel in carrying out the work plan is usually conceded by "headquarters" staff, the necessity for making the development of the plan a co-operative project is not so well recognized. The separatism which exists in many federal agencies between the Washington offices—the "bureau"—and the regional offices—the "field"—is the genesis of a method of operation which sets all objectives, projects and time schedules in Washington and sends the program to the field—"for your information."

The kind of plan and the quality of administration which results from this concept is easily identifiable: objectives which are not properly correlated with program deficiencies or operating needs; projects which are impossible of accomplishment within the time limits set; plans which do not provide the flexibility necessary to adapt them to new problems arising in the field or to the variations in problems due to geographic, economic or cultural differences between regions. Further, the co-operation secured from the field in effectuating a

work plan prepared by Washington, without benefit of consultation, is rarely wholehearted. The fact that complete understanding of the objectives is difficult at long distance plus a natural resentment at a plan which is developed "in vacuo" and imposed from above, lays the groundwork for sins of omission and in extreme instances, of deliberate sabotage.

The techniques and devices used by a particular agency to secure field participation will be dependent upon factors such as size and location of the field units, organization of the agency and the personalities involved. However, the most important consideration is that *some positive* program for obtaining field participation be developed.

The outline of such a program is suggested here:

Over-all policy or broad objectives should be established by the head office and then expanded by bureau and division heads, resulting in over-all policy suggestions and objectives for the bureau or division. These over-all, bureau and divisional, policies and objectives should be sent to the regional and individual field offices. The regional and field office force should be encouraged to modify or revise the outlines, if necessary, to make the plan fit the accomplishment of the over-all objective on the firing line. It is necessary to give the field office some idea or outline to work with, so that suggestions will be somewhat co-ordinated.

The work plan suggestions should go to the regional office and be co-ordinated for the region; to the bureaus in the central office and co-ordinated for the nation; to the administrator for policy approval. Care should be taken not to let regional office "sifting" of field office suggestions become so extensive that what might appear to the regional staff to be a trivial suggestion or one lacking adequate support to warrant "passing on" to the central level, may actually receive limited support from enough different sources to become a considerable factor.

In connection with the introduction of the preliminary outline, regional and national meetings, when feasible, should be held so that top administration and the bureau and division chiefs can personally explain the objective of the work plan and the field people can ask questions, make suggestions and explain their needs. Also, having representatives of the administrator's office visit the regional and individual field offices to discuss the work plan would be helpful.

This regularized process should be supplemented from time to time by such devices as: (a) the detail of representative members of the field units into head-

quarters offices with the management or program staff—to have them participate in the formulation of the plan; (b) sample field experiments to test the validity of certain objectives and methods before they are included in the agency work plan. In addition, continuing emphasis should be placed on field representatives as the eyes and ears of the headquarters staff. They should be encouraged to report needs which will become the basis for new objectives in connection with the work plan, and to report on public reactions to the projects undertaken. Such vital and continuous participation should assure a work plan which is sound in terms of field operations.

Technical Work Planning Unit

The service officer in the office of the top executive whose responsibility it is to handle the routine administrative processes—such as preparation of orders, organization charts, etc., usually attends to the mechanical job of compiling the approved work plan material into usable form, and securing proper distribution. The unit he assigns to this job might be termed “The Technical Work Planning Unit.” This unit may handle also the accomplishment reporting system, in so far as detailed reports are necessary. It may compile accomplishment reports as directed and receive, catalog and make available suggestions for revision of the next period’s work plan.

Staff Officers and Staff Units

The staff officer concerned with each major function will advise the chief executive on the broad formulations of the section of the work plan covering his particular activity. Where there is an over-all “program research” staff officer, he will point out to the executive those areas in which contraction, expansion, or re-orientation of the agency program should be considered in formulating the work plan.

In most agencies, the staff units concerned with research, statistics or program analysis will play a major role in the development of the work plan. The essence of a scientific work plan is the broad base of fact and analysis used to determine action to be taken. Past experience and performance are reviewed and tested as guides to future action. Trends in various fields which influence the work program are analyzed as a basis for forecasts of work loads and priorities of work. In other words, scientific planning substitutes careful fact-finding and analysis for the whims and fancies of executives. A precise plan of action is formulated rather

than vague indications of work to be done. In this process of exhaustive fact-finding and analysis the line must rely on its special staff services.

Developing the Work Plan—Specifying What, How Much, When and Who

What

The first essential to the development of the work plan is to determine *what* it is that you want to accomplish. Of course, the administrator is not completely a free agent in the determination of objectives for his agency. Congress, or executive order, has established basic objectives. Current political policy, public opinion, public need and public demand narrow still further the channel of decision, but within those narrows there are many alternative courses open to the top executive. He can embrace this project or drop that one, choose this route toward accomplishment of the general agency objectives or adopt the other one. These decisions must be made, and made in advance of the work period, if the development of the formal work plan is to be worth the effort. There is no use to expend energy in “paper planning” when everyone knows good and well that actual operations will proceed on a catch-as-catch-can or a purely opportunistic basis.

Granted that the administrator decides he really does want to plan the agency’s work, seek funds on the basis of that plan and allot provided funds strictly in accordance with it—how does he arrive at the definition of what is to be done?

He has available inspection data as to the effectiveness of past operation in various functions or areas, and indications of the comprehensiveness of coverage. There may be some soft spots here and there where the general program is not going forward at a rate consistent with other areas. His program research people may point out to him blind spots which aren’t being covered or opportunities for new projects more in tune with the times. His line officers may have suggestions for new approaches or opportunities for satisfying developing needs.

It is the administrator’s business to stimulate the flow of this type of information to his attention and it is his business to see that it is sifted and organized into a pattern of possible future action. With this picture before him he can then weigh the needs one against the other and select the goals to be aimed for during the coming work period. Each executive in every level of the hierarchy has this same problem before him. The

farther down the line one goes, the more circumspect becomes the area for decision. But there still is room for decision and each executive has opportunity and responsibility for contributing toward the building of the work plan edifice.

How Much

Once the question of what is to be done has been settled and formulated for the plan, the next move is to specify *how much* you want accomplished for each item. Actually, the soundness of your organization structure, the adequacy and efficiency of procedures, the effectiveness of supervision, the skill of personnel, and of course the amount of funds available, will determine how much work is accomplished under the plan.

But the problem at hand is determination of a method for expressing the quantitative objectives to be established in the work plan. Because the development and use of accurate measuring tools is so important, not only to the construction of your work plan but also to its later operation, this subject will be treated in some detail.

Work Units—The Need for Measurement in Work Planning

One of the problems in the development of a formal work plan which has "stumped the experts" in many agencies is the identification of comparable work units to be used as a basis for projecting the load into the future and for measuring accomplishment. The difficulty has been particularly acute in staff agencies or in staff time spent in any agency. But work planning, as a realistic and accurate technique of management and not just an exercise in theory for the planners, requires the development and use of measurement even for those activities traditionally thought of as immeasurable.

The initial phases of planning involve specifying the total objective and its component parts, differentiation of functional and operating responsibilities and development of an organizational structure which reflects the interrelation of the various parts of the program. To translate this into actual operation requires the use of definitely limited funds, which will buy a definitely limited number of man-hours, and quantities of materials. To avoid waste motion, it is necessary that each operating unit have a capacity geared to that of other units and to the total work load, and that contingency reserves of money, material and movable personnel be provided to cover areas of uncertainty. It is necessary to put the lawyer as well as the typist and the clerk through

the sometimes uncomfortable process of specifying what he produces, what the raw materials and finished products look like and how long it takes to process each kind of job. This information must then be expressed in terms of some kind of common denominator, as a basis for following interdivisional projects through all their steps and to provide data for over-all planning and budgeting. This means that different units of output must be expressed in terms of a standard or coordinated system of work units applicable throughout the whole area covered by the work plan.

Problems of Establishing Understandable, Measurable Work Units

The problems involved in establishing work units are somewhat different for various kinds of activity. While it is impossible to specify in detail methods for developing work units except in terms of specific activities, there can be indicated three principal groups, each of which has common characteristics so far as work units are concerned. These are:

- (a) Activities in which the work falls into standardized cases or projects, each of which involves (or a predetermined percentage of which involve) a number of recurrent tasks which are, individually or in quantity, identical.
- (b) Activities in which the work falls into well-defined tasks or functions, the exact incidence of which cannot be predicted, but the approximate load of which can be estimated over a period of time on the basis of statistical experience.
- (c) Activities in which incoming jobs cannot be predicted in advance, including activities which are "kaleidoscopic," involving new problems and tasks from day to day.

It is quite likely that the work of a large organization will include activities in each of these three groups, as well as many fields which are on the borderline between one group and another. In such a case the work planner will have to use three different techniques of work measurement, singly and perhaps in combination, and will then have to synthesize his results into a coordinated picture for the whole field of activity.

a. Standardized Cases or Projects

The techniques for measuring standardized routine work have been largely carried over into government from private industry. The distinguishing feature of standardized work is the "visibility" of the product,

such as a casting, a carburetor, or a completed record, and the fact that the addition made in each step of the process, such as the insertion of a screw or the posting of an entry, can be easily recognized. In this case there is no possibility of arguing over the unit of work; it is only necessary to sit down with a stop watch or to establish a work ledger, and you have the data for compiling standard production times and costs. By adding the individual tasks, there can be derived a standard total time and cost for each "case," allowance being made, of course, for tasks which only occur in certain percentages of the total number of cases.

While establishment of work unit accounting in the government has generally been limited to service units, where work records have been used to develop standard times for performing recurrent operations such as auditing, travel, supply and payroll vouchers, a few organizations have developed work units for their program operations and have used them for budgeting and scheduling their work. Two agencies which have developed measurement techniques to cover the majority of their operations are the Rural Electrification Administration in the Department of Agriculture and the Bureau of Old Age and Survivors Insurance in the Social Security Board. The development of rural electrification projects through their various stages and the handling of social security account number applications, wage items (used for computing eligibility to benefits), and monthly benefit amount and benefit claims, each involve recurrent standardized operations which lend themselves readily to the development and use of work units and other devices of measurement. For example, in the Bureau of Old Age and Survivors Insurance, advance planning is accomplished with satisfactory accuracy on the basis of careful estimates of basic loads prepared by the Analysis Division of the Bureau, taking into account such factors as anticipated shifts from employment not covered by the insurance program to covered employment, the number of persons who will enter the labor market, the number of persons who will retire, etc. From these basic loads and the related derivative loads, there are developed periodic and daily load estimates. Daily production rates and personal service requirements are computed for each operation, those for operations performed in the same unit being grouped together in a personnel budget for the unit. Within over-all budgetary limitations, the actual personnel is increased or decreased from the estimate in the same proportion that the work load varies from that expected.

To illustrate the way a personnel estimate for an

individual operation is arrived at, let us consider the examination and review of changes of address on the beneficiary rolls. It has been estimated that 636,300 beneficiaries will be on the rolls by June, 1942, and it had been found by experience that 2.7 per cent of Old Age and Survivors Insurance beneficiaries change their addresses each month. This gives a monthly load of 17,180 and a daily load of 863. As the standard production rate has been determined to be 140 cases per day for each clerk performing this operation, the estimated production indicates that 6.2 clerks will be required. The extra .2 is, of course, taken care of by switching clerks between related operations.

The results obtained through analysis of work loads and production experience do not in any sense constitute a fixed or arbitrary plan. Rather they are a point of reference for taking into account the effects of changes in work load or operating methods.

b. Activities Falling Into Defined Tasks or Functions but with Unpredictable Incidence

In activities which involve the performance of a number of tasks or functions but where there is no possibility of determining exactly when each will have to be done or how much work it will involve, it is necessary to plan in terms of the individual's or unit's work load over a period of time as a whole, without attempting to state what will be done on a given day. The Forest Service uses this technique in evaluating the job loads of its district rangers, each of whom supervises all the activities involved in caring for a section of a national forest. Upon analysis of current work actually performed and appraisal of jobs which need to be done, as well as estimates of probable occurrence of emergencies such as fires and storms, there are developed broad plans of work covering an entire season. These are refined by consolidating travel time (planning a number of jobs on one trip) and distributing nonrecurrent jobs to the months having the lightest loads of recurrent work. In case there is an overload (more work to be done than man-hours available), two plans are compiled, one for work that should be done and one for work that must be done. A bad discrepancy would serve as a basis for decreasing the size of the ranger district or appointing additional assistants for the ranger.

c. Activities Having Fluctuating and "Kaleidoscopic" Work Loads

The area in which measurement is most difficult and in which work planners are most likely to encounter

skepticism and resistance on the part of operating officials, is in nonstandardized and variable types of work, particularly those involving the activity of administrators, lawyers, writers, scientists and other technicians. It is against the tradition of many such people to submit to scheduling or measurement of their work. Admittedly, "brain work" is harder to measure than manual or mechanized clerical work, but those who perform it have a tendency to overemphasize the difficulties. Since the work of the planner himself is of the "kaleidoscopic" type, and since charity begins at home, it may often be desirable for the planning unit to begin by analyzing, measuring and scheduling its own work. It will usually be found that the planning unit which has demonstrated the value of a work unit system for its own operations will have less trouble in gaining acceptance of the idea by others.

In developing a system of work load and performance measurement for an office performing administrative or professional work, it is necessary to recognize several characteristics which are likely to apply to such operations:

1. Nonuniformity of assignments as to form, subject matter and method of handling.
2. Variability of work load.
3. Frequent joint handling of assignments within an office or with other offices, through conferences, committees, clearance, review, etc.
4. Necessity for technical and clerical personnel to switch back and forth between assignments, and often to work on three or four things at once.
5. Lack of clarity and preciseness in the differentiation of assignments and their classification.

The last of these characteristics is the only one which the planner can do anything to correct; he must accept and in some way adjust to the others. Because of factor (1) it is usually possible to set standard time values for only a limited portion of the work of the office; provision must be made for estimating the bulk of most assignments as they come in, either by the head of the office or by a scheduling clerk under his supervision. Because of factors (3) and (4) it is generally impossible to maintain exact records for every job, or to account for time on a minute-by-minute basis; it is necessary that smaller jobs be excluded from scheduling and time accounting, and that timing of larger jobs allow for a reasonable amount of interruption.

The first step in the development of work measurement for an administrative or professional office is anal-

ysis of the work done, including a classification of assignments as to function, specific subject matter, volume, degree of urgency and routing within the office. This should usually be supplemented by a desk-to-desk work load analysis, based on detailed work diaries for a limited period. It will then be possible to determine what jobs are large enough, important enough, or frequent enough to warrant scheduling and time accounting, what others are to be lumped together under the general heading of "routine" or several headings for different classes of "routine" and how much of each individual's time should normally be kept free for non-scheduled work.

Problems of Measuring Qualitative as Well as Quantitative Factors

Work measurement must take into account certain qualitative characteristics of the work being measured as follows:

- a. Qualities of performance by employees;
- b. Functionality (purpose, process and subject matter)
- c. Grade (required skill, responsibility, etc.)

While it may not always be possible for measurement to be applied directly to qualitative factors, it must not be applied in such a way as to ignore them; i.e., we would not say that because a given job involved 3 hours of executive time, 4 hours clerical and 2 hours stenographic that it was worth 9 units—with no qualifications. Nor should we overlook the difference in quality of performance found in this 3 hours of executive time as against that 3 hours of another executive. Measurement (as distinguished from judgment) of the quality of employee performance is generally possible only where work is standardized, where definite unit values apply to definite pieces of work and where perfect and imperfect products are readily distinguished.

The virtues of work measurement and scheduling, particularly as applied to executive, professional and other types of nonstandardized work, do not lie in any so-called "perfectionism." The work planner should not attempt to do the impossible by scheduling down to the minute assignments the essence of which is unpredictability, nor should he force into a procrustean system of units, jobs which are inherently uncomparable. Work measurement can only work if it is realistic in terms of the work being measured, if it makes reasonable allowances for things which cannot be anticipated and if it is limited to the minimum of detail which is

practical and useful in the development of the work plan.

When—the time element in work planning

After specifying what is to be done, and how much, a further important element in your plan is *when*. By what date do you expect project A to be completed, or part 3 of project E? What is the time element relationship between part 3 and part 7 of project B—must there be synchronization in their completion dates to attain the shortest possible over-all or elapsed time in completing the whole of the project? Scheduling must be introduced in your work plan if maximum contributions are to be made by it.

Scheduling

The key to effective scheduling is the selection of significant control points, the accomplishment dates for which will give a clue to progress on the project as a whole. To arrive at these control points requires careful analysis of each major operation to evaluate it in terms of the over-all objective. For example, in the Rural Electrification Administration, a regular progress report on the allocation of funds was made. This particular operation was selected as an indicator, or a "control point," because the measurement of the amount of funds allocated was an indicator of the progress of one very important phase of the program. It also happened, although this is not always true, that the allocation of funds represented work done by one division of the organization.

Similarly, the award of construction contracts was selected as a major control operation since it was an accurate measure of another important phase of the program. In this case, the award of construction contracts was only one of several operations performed by one division of the agency.

Needless to say, selection of the control points must necessarily vary with different problems, but it should be kept in mind that they will form the "backbone" of the control system, which as the work plan is placed in operation will keep you informed of progress. The measurement of accomplishment at these points should furnish a true over-all picture of the progress of the program.

When the substance—the *what* and *how much*—of a work plan is agreed upon, the control points should be selected and the control system designed around them. In the case of revision of the work plan, or the adoption of a new plan, new control points should be deter-

mined where necessary. The objective is always to have an immediate summarizing of the progress of the program in terms of the best indicators of progress.

One very important factor which must be taken into consideration is the complete and accurate definition of the control points. It is not sufficient to say, for example, "allocation of funds" and assume that everyone will understand just what constitutes the completion of that operation. It is necessary to define the completion specifically, making references to certain documents or papers where possible. For example, the completion of "allocation of funds" might well be defined as follows:

"The allocation of funds shall be considered complete on the date the (authorized officer) affixes his signature to the (title of document)."

This careful and specific definition of control points is necessary in order to insure uniformity of reporting and common understanding by staff members. In cases where a particular document or paper is not involved, the definition should describe as nearly as possible a certain action which constitutes the completion of the operation.

Projects of a Continuing Nature

Inevitably, a number of your agency's work projects will extend beyond the plan period. Some of these items are "overhead"—the review of field reports and their referral to the proper operating officials for action: this activity will continue as far ahead as we can see. Other projects are of a long-term nature—an experiment to find a substitute for rubber canning rings, which on the basis of our past experience, we may estimate as an 18 months job; or a research study which will test the adequacy or the duration of our benefit payments for unemployment, which will involve a year for completion.

Two complementary suggestions are in order: (1) Such projects may be differentiated from the short-term projects (which will carry dead line dates) by the notation "Continuing." This is a dangerous method: a better approach is (2) make an effort to break such long-term projects into their component parts with estimated completion dates for each part.

Who

The final element to include in development of the work plan is specific assignment of responsibility. Clearly there must be assignment of responsibility if

follow-up is to be made. Where several units have some responsibility for the same project, the degree of responsibility must be clearly delineated. For example, one unit may be assigned "primary" responsibility and another "advisory." Detailed co-ordination and clearance of such work plan items should be made, so that

each unit knows what work may be imposed because of projects planned by some other unit.

NOTE:—This concludes Part I. A description of the actual design of the work plan and administrative co-ordination and control will appear as Part II in a future issue of *ADVANCED MANAGEMENT*.

Free Enterprise Must Save Itself

(Continued from page 122)

ment to produce the goods they want as their wants are expressed in free open markets. In the other case they will work as long as they are told and where they are told with a large part of their labor going to the production of guns and monuments instead of consumer goods.

Will our industrial and business leaders fail us as they did before and after the debacle of the early thirties which resulted in our present extensive government controls? These controls are as good as we have reason to expect as, by definition, governments cannot control free enterprise. They can, however, co-operate with it.

Only by deeds, not by words, can Free Enterprise re-

gain public confidence. Free Enterprise still has it in its power to give our people an opportunity to earn a liberal share of an assured \$110 billion income instead of their being given, as a right, a share of a precarious \$70 billion income.

This paper is asking our business leaders to assume no new or additional powers. They now determine, through price regulation, the volume of production. They are merely asked to determine, through price regulation, that we shall have full employment production. Business has lost the first innings in the game of control to the government. Has it the courage, self-confidence and strength to re-enter the fight with the will to win?

Some Aspects of Non-Financial and Financial Incentives

(Continued from page 126)

so that normal incentive earnings are attainable. The net saving as determined by the old rate, the new rate and the cost of installing the improved method is then used as the basis for determining an award which is paid as a lump sum.

One thing is certain; if the usual trifling \$2.00 or \$5.00 award current under many suggestion systems is paid, it cannot be expected that many methods improvements will be turned in. The operators will prefer to work more slowly or to take a chance on being able to fight off a rate reduction rather than to give the company a large saving for a small return. The return must be substantial if it is to be worth the operator's while to submit the suggestion. One

company has recently installed a plan which offers the full net saving for a definite period of time up to \$1000. The initial response indicates that the plan has highly promising possibilities. Certainly in these times when increased production is so vitally important, management is justified in experimenting in this manner. There are literally countless thousands of good production-increasing ideas out among the men in the shop which are locked behind a barrier which is largely erected by self-interest on the part of both men and management. The key to that door will unlock a flow of production which will help greatly to engulf the Axis with a hitherto undreamed of stream of war goods.

Richard H. Lansburgh

September, 1893

June, 1942

The untimely death of Richard H. Lansburgh came as a great shock to his many friends in the field of industrial management.

Mr. Lansburgh was truly a pioneer in the management movement. By his teachings at the University of Pennsylvania, where he was Professor of Industry, thousands of young men were interested in the increasingly important field of management. His inspiring teaching and the clarity of his thought and expression were universally admired.

Graduating from the Wharton School of the University of Pennsylvania in the Class of 1915, he was associated at the University in the organization and operation of the Ordnance Stores Course for the United States Army during World War I. By the end of the war, he had been promoted to the rank of Major of Ordnance, United States Army. Returning to the University of Pennsylvania, he continued his career as a teacher and was rapidly promoted to the position of Professor of Industry.

Mr. Lansburgh's interest in the improvement of management was not limited to the factory. While at the University of Pennsylvania, he was appointed Secretary of Labor and Industry for the Commonwealth of Pennsylvania. His accomplishments in this office were considered noteworthy by all who came in contact with them. Labor, management, the public and the employes of the Department of Labor and Industry had confidence in him and in his policies. His administration of the Department is looked upon as one which made many noteworthy advances.

Mr. Lansburgh, as industrial consultant for the First National Bank of Detroit, was instrumental in improving the management of many of the companies with which the bank had connections.

Active as a national and chapter officer of the Taylor Society, The Society of Industrial Engineers and The Society for the Advancement of Management, he was influential in the spread of management knowledge through these agencies.

Always anxious to serve his fellowmen he was active in many national, state and local government agencies as a consultant or as an active member of committees. His most recent association with the Pennsylvania Economy League was productive of much excellent work in the application of management to government.

A man whose friends were legion, he will be missed by them because such sincere mutual friendship cannot pass out of existence without leaving a tremendous void.

If the success of a man's life is measured by the influence for good which he has had upon his fellowmen, the community and the nation, the career of Richard H. Lansburgh was eminently successful.

V. S. KARABASZ.

REVIEWS

Arbitration in Action. By Frances Kellor, Harper & Brothers, New York and London, 1941, pages x, 412. (\$3.50.)

Reviewed by HERMAN FELDMAN, Dean, School of Business and Civic Administration, The College of the City of New York.

Agencies exist to encourage individuals who have a cause of dispute against each other to avoid litigation by voluntarily submitting the issue to a jointly acceptable arbitrator, and already many thousands of people have obtained expeditious, economical and amicable adjustment of contentious issues. In response to an "overwhelming number of inquiries on the subject," Miss Kellor, who has been executive head of the American Arbitration Association for fifteen years, has written this book, partly to reduce the number of such inquiries and partly to inform organizations, companies, unions and people generally of the opportunities and practices in this field.

The first half of the book outlines, in readable and informative chapters, the principles of arbitration, the rules of procedure, the legal basis, the methods of operation and the enforcement of agreements. It then gives a full description and case history of three special types of settlements—inter-American commercial disputes, the accidents claims tribunal in New York, and the epochal Federal decree in the motion picture industry. The latter sets up a national arbitration system as a means of curbing monopoly trade practices charged in a suit against five of the largest producers. The second half of the book contains the detailed statutes of the State and Federal Governments and the rules, procedures, legal cases, and other factual data dealing with arbitration. The volume is thus equally valuable to the person who may wish to avail himself of arbitration and to the person who wishes to know about it as a social process.

Fatigue of Workers and Its Relation to Industrial Production. By Committee on Work in Industry of the National Research Council, Reinhold Publishing Corporation, New York, 1941, pages 165. (\$2.50.)

Reviewed by LILLIAN M. GILBRETH, Chairman, Department of Personnel Relations, Newark College of Engineering and Professor of Management, Purdue University.

This book is a report which warrants careful reading. It includes a short, but excellent introductory statement which out-

lines the limits of the study and the techniques used in making it. It is a survey of research going on; not an attempt at new research. The research covers largely a study of physiological conditions of men at work.

The report itself has also an introduction which lists the personnel of the Committee and the fields they represent. It is an excellent list. The headings of the nine chapters that follow indicate clearly the contents.

- I Introduction
- II Heat and High Altitude
- III Some Industrial Causes of Illness
- IV The Western Electric Researches
- V The Interviewing Method
- VI Self-expression and Labor Unions
- VII Extra-time Allowances
- VIII A Study of Organization
- IX Summary

The final chapter is a five-page summary of terse numbered paragraphs boiling down the important conclusions and tying them carefully back to the investigations on which they are based.

A little of the material of this book is new; much of it is well known to the alert, intelligent industrial engineer who has been fortunate enough to attend technical meetings and read the material in this field. The value of the book lies in the excellent selection, presentation, evaluation and correlation of the material. The style is clear, suitable and attractive. An added value is the fine pattern it presents of a well thought through procedure of setting up a Committee to make a study selecting the field personnel and methods and carrying through the project to completion.

No woman was included on the Committee. This seems odd as so much of the material included has to do with women in industry. In spite of this fact the problems in this area have received careful consideration.

The book is a real contribution in the field of adjusting technical progress to human progress. It is sure to be read with interest and referred to frequently. The generosity with which individuals and organizations have contributed their findings or their time and experience in evaluating these deserve great appreciation.

On the Agenda of Democracy. By Charles E. Merriam, Harvard University Press, Cambridge, Mass., 1941, pages xiv, 135. (\$1.50.)

Reviewed by ORDWAY TEAD, *Editor, Economic Books, Harper & Brothers, New York.*

Dr. Merriam is at that happy point of detached maturity where he is able to bring to his pronouncement a truly philosophic and statesmanly quality. He has wide scholarship, true perspective and a realistic grasp of the complexities of government today, and of its relation to the total conduct of modern society. No other volume has approached this in orienting in a simple and understandable way the kind of political problems which the American democracy faces. Fortunately, the nature of political problems as Dr. Merriam sees them is as broad as the organized life of the modern state. Specifically, his dis-

cussion of law-making, of the intricacies of public administration, of the inwardness of democratic planning and the relation of democracy to a world order, is on a high level of vision and practical astuteness.

No industrialist, and no one concerned with the quality of administration in the modern politico-economic state, as it has to be conducted in a democratic society, can afford to ignore the wise warnings of this volume. It is to be warmly and unqualifiedly commended to everyone who would take the larger and deeper view of all the problems which can be summed up in the phrase, the effectuating of democratic processes in the exercise of administration. Here speaks the voice of fine appreciation of what has been best in the democratic tradition, as it projects itself forward in a creative mind into the world of the last half of the twentieth century.

The Control and Valuation of Inventories. By National Association of Cost Accountants, J. J. Little and Ives Company, 1941, pages viii, 408. (\$3.00.)

Reviewed by S. A. PECK, *Vice President, The Trundle Engineering Company, Cleveland.*

This book consists of a compilation of papers published separately in previous Bulletins and Year Books of the Association, condensed and edited to give a more or less continuous exposition of the book subject.

The contents of the book are divided into four parts: Part I, Inventory Control; Part II, Inventory Valuation; Part III, Inventory Taking; Part IV, Inventory Practice.

As a compendium of actual practice, little criticism can be directed against the material, although some of the included papers date back to 1922. A basic fault, repetition, inherent in a compilation of papers dealing with the same theme, is evidenced in some sections of the book. Idea repetition occurs somewhat frequently in this text, but is forgiven on the score that there is a decided value in reiteration if the emphasis on a principle or fundamental concept is desired.

The section on Inventory Valuation is particularly complete. What other sections lack in this respect is outweighed by the case illustrations developed by each paper, which effectively dramatize the principles and procedures discussed by each author.

Although the technique of inventory control in the past twenty years shows great development, and the mechanisms for implementing good control are a far cry from the days of the old bound inventory ledgers, the book can be well epitomized by the statement of one of the authors that there is no substitute for good human judgment in the implementation of inventory control.

Women in War Industries. By Helen Baker, Industrial Relations Section, Princeton University, Princeton, 1942, pages 82. (\$1.50.)

Reviewed by MARY GILSON, *Special Mediation Representative, War Labor Board.*

Helen Baker has made a timely and important contribution to our war effort. *Women in War Industries* should be in the

hands of every employer and personnel manager engaged in war work. Even if some of them have no intention at present of employing women they may waken up some day to the necessity of grappling with what they now sourly regard as a "problem" or an "evil." The intelligent use of women in industry during these crucial times has been only too rare. In spite of impressive evidence of the important role women have assumed in the war industries of the totalitarian states and Great Britain, in spite of the excellent record our women had in the first world war, there are still many men in our war plants who hesitate to employ women or who, when they finally take the fateful plunge, raise their eyebrows in astonishment at the discovery that women can do highly technical work.

Our dilatoriness in training women in the "Training in Industry" and other government projects has been due partly to our long term of "business as usual," much of which was due in turn to the congenial isolationists who thought Hitler didn't mean business. But it was due also to the anachronous position of women in our society. Every lame, halt, blind, deaf and dumb (sic!) man was to be given an honest-to-God job while the women were told to knit and to wash the children's ears "just a little better" than they had ever before been washed! Again and again we have wearily listened to the old refrains, such as "Women can be used only in repetitive, routine work," implying, in spite of incontrovertible evidence to the contrary, that we are ambitionless, patient-because-dumb Griseldas. Again and again we have heard "Women don't like to work under women," sweet to the ears of hang-over Victorians of all ages and both sexes. We read in the daily press at least once a week about foremen who jocosely request "pretty girls" for their departments and about men workers who find working with women too disturbing for their mercurial emotions. The term "forelady" (why not foregentleman?) survives as one of the examples of superficial "chivalry" which so often serve as substitutes for equality of opportunity.

But the picture is not all black, as is evidenced by photographs and stories appearing in the press concerning progressive firms. Miss Baker has assembled and interpreted in readable and scholarly fashion the experience of sixty-two firms which, for the most part, "had better than average standards in industrial relations policies." She started her survey in October, 1941, keeping in mind two aims in particular: "(1) how personnel and labor relations have been or are likely to be affected by the great increase in the employment of women, and (2) what is accepted as sound policy and good practice by companies which have earned for themselves the reputation of maintaining high standards in industrial relations."

As her study progressed, Miss Baker saw the need of a third approach, "how a company can co-operate with community or government agencies to improve conditions outside the factory which may affect industrial production almost as much as the personnel policies of the individual concern." She saw that some of these conditions outside the factory affect the employment and productivity of both men and women but that others are particularly related to and accentuated by the increasing number of women entering industry. For example, most women workers in our society have two jobs, one at home and one at the plant. The connection between this hard and cold fact and the communal feeding projects in Great Britain does not need diagramming. Miss Baker has drawn on not only the experi-

ence of plants in the United States but on British experience in the rapid and satisfactory adjustment of women in war plants.

Problems relating to Selection and Placement, Induction and Training, Hours of Work, Wage Rates and Wage Policies, Health and Safety and Problems Outside the Plant are comprehensively and yet concisely discussed. An excellent "Selected Bibliography" has been compiled by the author, including Judith Grunfeld's remarkably illuminating *Women's Work in Russia's Planned Economy*.

Miss Baker concludes with "The co-operation of industry, labor, government and community social and educational agencies is essential if women are to be of the greatest service to war industries and to their country." May I add my conviction that we need in regard to women what Frederick W. Taylor termed in regard to industry "a mental revolution." Women will be of only negligible service to their country until the fusty, outworn ideas concerning their "sphere" are blown out of our stifling air by fresh breezes. There is much phrase-making about the brave new world we are coming into when the horrors of Nazi brutality are put down. Let us hope that brave new world will furnish to women equal opportunity for training and advancement in any work they are capable of performing. Let us hope they will no longer be regarded as strange, abnormal creatures "invading" the sacred and selfishly guarded domains of man.

These are perilous times. There is no time to lose. Our government officials admit that Mr. McNutt will soon have distributory control over the labor supply. The one big "bottleneck" retarding the United States war effort may prove to be labor shortage. It is therefore incumbent upon employers, labor leaders and the public in general to urge the immediate wide scale induction and training of women. "No more fooling" should be woman's battle cry today. And "the sky's the limit" should be a refrain for both war and peace. Miss Baker's book furnishes valuable information for winning the war and for building up a better society by the more intelligent use of women power.

Dynamic Administration. Edited by Henry C. Metcalf and L. Urwick, Harper & Brothers, New York and London, 1942, pages 320. (\$3.50.)

Reviewed by HENRY S. DENNISON, President, Dennison Manufacturing Company, Framingham, Massachusetts.

It is likely that this war, like the last one, will arouse a fresh and lively interest in trying to find out what measures may make a large organization of human beings more and less efficient. After the last war this interest by and large played itself out working over problems of organization structure—the anatomy of organization—leaving to the few natural-born pioneers discussions of the life forces which make the structure work. High up at the head of the list of these pioneers stood Mary Follett.

The collection made by Henry Metcalf and Major Urwick of fourteen of her papers, and given the title *Dynamic Administration* very skillfully sets forth the vital points which were the fruits of her life's study and her unique contribution to the

art of business management. For although her own experience and observation ranged beyond strictly business problems, she liked to focus most of her thinking upon the business field, believing that what proved good there would clarify some of the larger problems even of governmental administration.

The very excellent Introduction puts it thus:

She saw that on the job, both as an individual and as part of a working group and of the total force a man was activated by the same habits and desires as he was in his more personal life. Consequently she saw the individual and human relationships as the bedrock foundation of business organization, and business organization as simply a part of the whole human organization which makes up society. She knew that the fundamental organizational problem of any enterprise—be it national government, local government, business management, an educational system or Church administration—is the building and maintenance of dynamic, yet harmonious, human relations for joint effort in the most effective conduct of that enterprise.

The book is of crucial interest to any one wishing to see below the structural forms and into the vital processes of a live organization of human beings. But it is in the first instance a book for business administrators. In Seebohm Rowntree's foreword he says:

As one who, as a business administrator and in other spheres, has tried to act on the principles she enunciates, I can say with confidence that there is not a single administrator who . . . would not benefit by reading this collection of her papers. They are not abstruse, nor overloaded and difficult to read; on the contrary, they are simple, straightforward and easily understandable. Yet the teaching they contain is so profound as to merit study by even the most successful of practical administrators.

Mary Follett persistently sees below the surface, not only of the structural organization but of the basic conceptions of her dynamics. "Order-giving" is not to her merely the giving of orders; it is an attempt to influence a living environment toward a desired end and is to be judged in each case by its fitness to the environment and for the end. By the time she gets through analyzing it and illustrating it by her characteristically varied cases, we begin to see order-giving not as an empty ritual, but as a varied set of purposive acts, more and less effective; and we begin to see its actual possibilities and its very real limitations.

Power, Authority and Leadership are other factors of the dynamism of organization which Mary Follett takes to pieces and puts together again so that they come alive to the man planning and running an organization instead of being dead-weight concepts. Is Power power-over or power-with? Is Authority a social status or an integrating force? Does it inhere in the environment—does it arise from the "laws of the situation,"—or is it conferred from without and enforced from without? With different answers to these questions the practical day-to-day management of a business organization should differ.

The disclosure of the many and conflicting varieties of conflict is a favorite theme of these papers. Not even the conflict of deep interests and preconceptions is to be deplored; out of it may arise by the art of leadership some of the greatest of

man's accomplishments if its value as a means of exploration and analysis is recognized and its results are integrated. When the race grows to maturity so useful a tool will not so often be allowed to result in serious losses or discouraging cancellation of energies.

These papers were written long before the day in which the fundamental conception of "power-over" is in a life and death struggle with the conception of "power-with." But many pages could be used now to give meaning to the (as yet unwritten) philosophy of the democracies. Both conceptions of the power necessary to hold a modern society together include physical violence and moral persuasion, as any political theory must as yet. But Mary Follett makes abundantly clear that when the proportionate share of physical force passes beyond the point appropriate to any given situation energies are lessened and the self-respect we call "freedom" is lost; that controls congruent with and growing out of any social situation increase freedom and enhance energy; that no lasting community can be built but upon the consent of the governed—the honest and true consent of the governed.

Dynamic Administration is a great and useful book. The two men who are responsible for it, although most of the time three thousand miles apart, must be given high credit.

Do You Want to be a Foreman? By Alfred Walton, McGraw-Hill Book Company, New York and London, pages x, 165. (\$1.25.)

Reviewed by J. H. VERTREES, Associate Professor in Executive Training, Rutgers University, New Brunswick, N. J.

This book, according to the foreword, is an outgrowth of extension courses in pre-foremanship in which the author collaborated. The material, in twenty chapters, under such headings as "Do You Really Want Promotion," "Take a Personal Inventory," "Outgrow Your Job," "Aptitudes, Abilities and Habits," "Interesting the Worker," "Selection and Training," "Merit Rating," "Planning," and "Grievances," is primarily inspirational.

More than half of the book is devoted to consideration of the personal traits necessary or desirable in a foreman and obviously is designed to stimulate aspiration to foremanship. This motive is sound if the reader has, or can develop, the ability necessary to become a foreman. Promiscuously read, the book, on account of its strong emotional appeal, might easily produce unsatisfactory results.

The chapters dealing with specific foremanship responsibilities such as "Interesting the Worker," "Selection and Training," "Merit Rating," "Planning," "Grievances," etc., contain general information on these subjects, easily read and interesting. There is a conspicuous absence, however, of specific techniques involved in foremanship responsibilities. The inspirational approach is as much in evidence in the treatment of these chapters as in the earlier ones.

The book teems with interesting verbal illustrations, the tone of which is in keeping with the inspirational nature of the book. The young aspirant to foremanship will find the reading of this book a pleasant and stimulating task.

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